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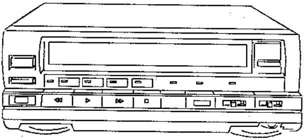
AIWA®

HV-M100SH

SERVICE MANUAL



VIDEO CASSETTE RECORDER

- BASIC VIDEO MECHANISM : TN – 5900
- TYPE. SH

Refer to the HV – MG330 and HV – M110 service manuals for the following. STANDARD MAINTENANCE, SERVICE JIGS AND TOOLS, DISASSEMBLY INSTRUCTIONS, ADJUSTMENT, PRACTICAL SERVICE FIGURE, WAVEFORM, IC BLOCK DIAGRAM, IC DESCRIPTION.

AIWA Co., Ltd.

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SPECIFICATIONS

Recording/Playback system
Video: Rotary 2 heads helical scan system
Audio: fixed head

Video signal
PAL/MESECAM color signal,
625 lines, 50 fields
$\text{NTSC}_{3.58}$/$\text{NTSC}_{4.43}$ color signal,
525 lines, 60 fields

Recording/Playback time
4 hours max. with E-240 tape, standard speed (PAL/MESECAM)
2 hours 40 minutes max. with T-160 tape, standard speed (NTSC)

Usable cassette
VHS video cassette

Tape width
12.65 mm

Tape speed (Standard speed)
PAL/MESECAM: 23.39 mm/sec
$\text{NTSC}_{3.58}$/$\text{NTSC}_{4.43}$: 33.35 mm/sec

RF output
UHF channel between 30 and 39, PAL-K or PAL-G output

Video Input
1.0 Vp-p, 75 ohms unbalanced

Video output
1.0 Vp-p, 75 ohms unbalanced

Audio input
-10 dBs, 47 kohms

Audio output
-8 dBs, 2.2 kohms

Operating temperature
5°C - 40°C

Input/output
Audio input (AUDIO IN):
phono jack (1)
Audio output (AUDIO OUT):
phono jack (1)
Video input (VIDEO IN):
phono jack (1)
Video output (VIDEO OUT):
phono jack (1)
Antenna input (AERIAL):
IEC connector, 75 ohms (1)
Antenna output (RF OUT):
IEC connector, 75 ohms (1)

Power requirements
110 - 240 V AC, 50/60 Hz

Power consumption
25 watts

Dimensions
270 (W) × 95 (H) × 355.5 (D) mm
($10\frac{3}{4} \times 3\frac{3}{4} \times 14$ in.)

Weight 4.2 kg (9.24 lb.)

- Design and specifications are subject to change without notice.

ELECTRICAL MAIN PARTS LIST

REF. NO.	PART NO.	DESCRIPTION
=== IC ===		
	87-001-778-010	IC, AN3331K
	S0-051-C02-030	IC, AN7805F
	87-001-853-010	IC, BA6209-V3
	87-001-777-010	IC, BA6219B
	87-001-939-010	IC, CXL5001P
	87-002-485-080	IC, CXL5003M
	87-001-937-010	IC, CXL5003P
	S1-2EI-C02-010	IC, HA17431PA
	80-JUB-653-010	IC, HD404302A21S
	80-JUB-652-010	IC, HD49754NT
	87-001-970-010	IC, LA7297
	87-001-938-010	IC, LA7311
	87-001-773-010	IC, LA7323
	87-001-901-010	IC, LA7333
	87-002-304-080	IC, M51271FP
	87-001-712-080	IC, M74HC08FP
	87-002-299-080	IC, MB40776 FPT
	87-002-300-080	IC, MB40778 FPT
	80-JU4-700-010	IC, MB87813
	80-JUB-658-010	IC, MB88515B-1359K
	87-002-449-010	IC, NJM2233BS
	87-002-273-080	IC, NJM2246M
	87-002-384-010	IC, NJM2246S
	87-002-532-010	IC, PQ05RF11
	S1-2EI-C02-020	IC, PQ09RF11
	87-020-923-080	IC, PST523D
	87-001-790-010	IC, SBX1610-52
	87-027-564-010	IC, TC4011BP
	87-002-567-080	IC, TC4030BF
	87-001-990-010	IC, TC4049 BP
	87-002-298-080	IC, TC74HC00AF
	87-002-329-080	IC, TC74HC02AF
	87-001-794-080	IC, TC74HC157F
	87-001-604-080	IC, TC74HCU04F
	87-002-528-080	IC, TC7W04F
	87-002-395-010	IC, TMS4464-10NL
	87-002-305-080	IC, UPC661G
=== TRANSISTOR ===		
	87-026-452-080	TRANSISTOR, 2SA933S(RS)
	87-026-463-080	TRANSISTOR, 2SA933S(RS)
	89-110-373-080	TRANSISTOR, 2SA1037S
	89-110-484-080	TRANSISTOR, 2SA1048Y
	87-026-462-080	TRANSISTOR, 2SC1740S(RS)
	89-322-233-080	TRANSISTOR, 2SC2223F13
	89-322-746-080	TRANSISTOR, 2SC2274F
	89-324-123-080	TRANSISTOR, 2SC2412S
	87-026-211-080	TRANSISTOR, DTA144EK
	87-026-219-080	TRANSISTOR, DTA144ES
	87-026-235-080	TRANSISTOR, DTC114EK
	87-026-245-080	TRANSISTOR, DTC114ES
	87-026-464-080	TRANSISTOR, DTC114TS
	87-026-210-080	TRANSISTOR, DTC144EK
	87-026-218-080	TRANSISTOR, DTC144ES
	87-026-355-080	TRANSISTOR, FMA2
	87-026-430-080	TRANSISTOR, FMG2
=== DIODE ===		
	87-020-465-080	DIODE, 1SS133
	87-020-027-080	DIODE, CHIP 1SS184
	S0-4ED-002-040	DIODE, ERB83-006
	87-020-752-010	DIODE, 1SS202(1)-T1
	S0-05D-002-050	DIODE, RD24F
	S1-9A0-D01-030	DIODE, RD6.2FB
	S0-05D-001-010	DIODE, S1WBA60
	S0-05D-002-010	DIODE, S3LA20
	87-027-416-080	DIODE, ZENER HZ3C2
=== MAIN CIRCUIT BOARD SECTION ===		
C201	★87-010-263-080	CAP, ELECT 100-10
C202	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C203	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C204	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C211	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C212	★87-010-263-080	CAP, ELECT 100-10
C213	★87-010-263-080	CAP, ELECT 100-10
C221	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C222	★87-010-384-080	CAP, ELECT 100-25 SME
C301	★87-015-695-080	CAP, ELECT 1-50 7L
C302	★87-010-264-080	CAP, ELECT 100-10 5L
C303	★87-010-401-080	CAP, ELECT 1-50 SME
C304	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C305	★87-010-401-080	CAP, ELECT 1-50 SME
C306	★87-010-401-080	CAP, ELECT 1-50 SME
C307	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C308	★87-010-401-080	CAP, ELECT 1-50 SME
C309	★87-010-401-080	CAP, ELECT 1-50 SME
C310	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C321	★87-010-263-080	CAP, ELECT 100-10
C322	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C324	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C326	★87-018-109-080	CAP, CERA-SOL U 22P-50 SL
C327	★87-018-150-080	CAP, CERA-SOL U 18P-50 CH
C328	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C330	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C341	★87-010-404-080	CAP, ELECT 4.7-50 SME
C342	★87-010-404-080	CAP, ELECT 4.7-50 SME
C343	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C344	★87-010-404-080	CAP, ELECT 4.7-50 SME
C361	★87-010-404-080	CAP, ELECT 4.7-50 SME
C362	★87-010-401-080	CAP, ELECT 1-50 SME
C363	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C364	★87-010-709-080	CAP, ELECT BP 0.22-50
C366	★87-010-384-080	CAP, ELECT 100-25 SME
C367	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C368	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C369	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C370	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C371	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C372	★87-010-400-080	CAP, ELECT 0.47-50 SME
C381	★87-018-131-080	CAP, CERA-SOL U 1000P-50 B
C382	★87-010-382-080	CAP, ELECT 22-25 SME
C383	★87-010-405-080	CAP, ELECT 10-50 SME
C384	87-018-123-080	CAP, CERA-SOL U 220P-50 B
C385	★87-010-404-080	CAP, ELECT 4.7-50 SME
C386	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C401	★87-010-374-080	CAP, ELECT 47-10
C402	★87-018-205-080	CAP, CERA-SOL U 0.022-25 F
C403	★87-010-403-080	CAP, ELECT 3.3-50 SME
C404	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C405	★87-010-405-080	CAP, ELECT 10-50 SME
C407	★87-010-402-080	CAP, ELECT 2.2-50 SME
C408	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C411	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C413	★87-018-126-080	CAP, CERA-SOL U 390P-50 B

REF. NO.	PART NO.	DESCRIPTION
C415	★87-018-149-080	CAP, CERA-SOL U 15P-50 CH
C416	★87-010-131-080	CAP, ELECT 0.47-50 BP
C417	★87-010-131-080	CAP, ELECT 0.47-50 BP
C418	★87-010-131-080	CAP, ELECT 0.47-50 BP
C420	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C421	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C422	★87-018-115-080	CAP, CERA-SOL U 47P-50 SL
C424	★87-018-122-080	CAP, CERA-SOL U 180P-50 B
C426	★87-010-405-080	CAP, ELECT 10-50 SME
C432	★87-018-125-080	CAP, CERA-SOL U 330P-50 B
C433	★87-018-117-080	CAP, CERA-SOL U 68P-50 SL
C434	★87-018-107-080	CAP, CERA-SOL U 18P-50 SL
C441	★87-010-374-080	CAP, ELECT 47-10
C442	★87-010-374-080	CAP, ELECT 47-10
C445	★87-018-115-080	CAP, CERA-SOL U 47P-50 SL
C446	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C447	★87-018-115-080	CAP, CERA-SOL U 47P-50 SL
C448	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C449	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C450	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C451	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C452	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C453	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C454	★87-018-109-080	CAP, CERA-SOL U 22P-50 SL
C455	★87-018-117-080	CAP, CERA-SOL U 68P-50 SL
C456	★87-018-109-080	CAP, CERA-SOL U 22P-50 SL
C457	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C458	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C459	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C460	★87-018-214-080	CAP, CERA-SOL U 0.1-50 F
C461	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C462	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C472	★87-018-123-080	CAP, CERA-SOL U 220P-50 B
C473	★87-010-405-080	CAP, ELECT 10-50 SME
C486	★87-010-935-080	CAP, ELECT 220-16 VR
C487	★87-018-205-080	CAP, CERA-SOL U 0.022-25 F
C488	★87-010-263-080	CAP, ELECT 100-10
C489	★87-010-371-080	CAP, ELECT 470-6.3
C490	★87-010-374-080	CAP, ELECT 47-10
C491	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C492	★87-010-374-080	CAP, ELECT 47-10
C493	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C494	★87-010-405-080	CAP, ELECT 10-50 SME
C495	★87-010-405-080	CAP, ELECT 10-50 SME
C501	★87-010-374-080	CAP, ELECT 47-10
C502	★87-018-205-080	CAP, CERA-SOL U 0.022-25 F
C503	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C504	★87-018-205-080	CAP, CERA-SOL U 0.022-25 F
C505	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C506	★87-010-401-080	CAP, ELECT 1-50 SME
C507	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C508	★87-010-401-080	CAP, ELECT 1-50 SME
C509	★87-015-695-080	CAP, ELECT 1-50 7L
C510	★87-018-205-080	CAP, CERA-SOL U 0.022-25 F
C511	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C512	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C513	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C514	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C518	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C519	★87-010-401-080	CAP, ELECT 1-50 SME
C520	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C521	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C522	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C523	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C524	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C525	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C526	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C528	★87-018-114-080	CAP, CERA-SOL U 39P-50 SL
C532	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C534	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C551	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C552	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C553	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C554	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C555	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C556	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C557	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C558	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C559	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C560	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C561	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C562	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C563	★87-018-213-080	CAP, CERA-SOL U 0.047-50 F
C564	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C565	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C566	★87-018-115-080	CAP, CERA-SOL U 47P-50 SL
C591	★87-010-405-080	CAP, ELECT 10-50 SME
C592	★87-010-405-080	CAP, ELECT 10-50 SME
C593	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C594	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C595	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C597	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C598	★87-010-263-080	CAP, ELECT 100-10
C601	★87-010-260-080	CAP, ELECT 47-25 SME
C602	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C603	★87-010-263-080	CAP, ELECT 100-10
C604	★87-010-404-080	CAP, ELECT 4.7-50 SME
C605	★87-010-403-080	CAP, ELECT 3.3-50 SME
C606	★87-010-403-080	CAP, ELECT 3.3-50 SME
C607	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C608	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C609	★87-018-121-080	CAP, CERA-SOL U 150P-50 B
C610	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C784	★87-018-203-080	CAP, CERA-SOL U 8200P-16 Y
CL201	★87-030-214-080	RESONATOR, CERAMIC KBR6.0MKS
DL501	★80-JUB-675-010	DELAY, ADL-FN1344W
DL502	★80-JUB-676-010	DELAY, ADL-FE2544W
DL503	★80-JUB-674-010	DELAY, ADL-FN1334W
FL401	★89-JU8-618-010	FILTER, MXV-7XF 3M
FL501	★87-008-443-080	FILTER, SFS4.21ME
FL502	★87-008-416-080	FILTER, SFS 5.06ME
FL503	★80-JU1-743-010	FILTER, LPF 1.1M SG
FL504	★80-JUB-681-010	FILTER, BPF 3.58M SG
FL505	★80-JUB-682-010	FILTER, BPF 4.43M SG
J401-1	★87-009-174-010	JACK, PIN 4P(AUDIO IN)
J401-2	+++	JACK, PIN 4P(AUDIO OUT)
J401-3	+++	JACK, PIN 4P(VIDEO IN)
J401-4	+++	JACK, PIN 4P(VIDEO OUT)
L201	★87-005-440-080	COIL, 47UH FLR50
L202	★87-003-154-080	COIL, 220UH
L301	★87-005-440-080	COIL, 47UH FLR50
L302	★87-006-189-080	COIL, 220UH EL0909
L303	★87-006-189-080	COIL, 220UH EL0909
L401	★87-005-436-080	COIL, 22UH FLR50, K
L402	★87-003-102-080	COIL, 10UH
L431	★87-003-288-080	COIL, 180UH LAL02
L432	★87-003-286-080	COIL, 56UH LAL02
L441	★87-005-436-080	COIL, 22UH FLR50, K

REF. NO.	PART NO.	DESCRIPTION
L442	★87-005-436-080	COIL, 22UH FLR50, K
L443	★87-003-150-080	COIL 68UH LAL02
L444	★87-003-150-080	COIL 68UH LAL02
L445	★87-003-150-080	COIL 68UH LAL02
L446	★87-003-150-080	COIL 68UH LAL02
L486	★87-005-456-080	COIL, 1000UH FLR50, K
L488	★87-005-444-080	COIL, 100UH
L501	★87-005-436-080	COIL, 22UH FLR50, K
L503	★87-003-283-080	COIL, 18UH LAL02
L551	★87-003-146-080	COIL, 15UH LAL02
L552	★87-003-146-080	COIL, 15UH LAL02
L553	★87-003-146-080	COIL, 15UH LAL02
L554	★87-003-285-080	COIL, 39UH LAL02
L601	★87-003-152-080	COIL, 100UH
L602	★87-003-102-080	COIL, 10UH
R281	87-029-361-090	RES, FUSE 3. 3-1/2W
R376	87-029-361-090	RES, FUSE 3. 3-1/2W
R410	87-025-423-080	RES, MF 4. 7K-1/6W F
RA201	★84-487-615-010	RES, ARRAY 10KX12 LE
RA202	★84-487-615-010	RES, ARRAY 10KX12 LE
RA203	★80-JUB-657-010	RES, ARRAY 10KX10 LE
RA204	★80-JUB-656-010	RES, ARRAY 10KX5 LE
RF386	★89-JU9-617-010	RF MOD, MDLK 6E 764A
SFR301	★87-024-177-080	SFR, 220K
SFR302	★87-024-176-080	SFR, 100K
SFR401	★87-024-170-080	SFR, 3. 3K
SFR402	★87-024-172-080	SFR, 10K
SFR403	★87-024-172-080	SFR, 10K
SFR404	★87-024-168-080	SFR, 1K
SFR405	★87-024-169-080	SFR, 2. 2K
SFR406	★87-024-169-080	SFR, 2. 2K
SFR431	★87-024-170-080	SFR, 3. 3K
SFR531	★87-024-168-080	SFR, 1K
SW401	87-036-185-010	SW, SLIDE(PICTURE)
X301	★80-JUB-655-080	RESONATOR, CRYSTAL 13. 3M
X302	★80-JUB-654-080	RESONATOR, CRYSTAL 10. 7M
X501	★80-JUB-678-080	RESONATOR, CRYSTAL 3. 58M
X502	★89-JU7-641-080	RESONATOR, CRYSTAL 4. 43M

=== FRONT CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C901	★87-015-681-080	CAP, ELECT 10-16 7L
C902	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
D912	87-001-123-080	LED, SLZ-981C-02(POWER)
D913	87-001-124-080	LED, SLZ-381C-02(PAL)
D914	87-001-124-080	LED, SLZ-381C-02(MESECAM)
D915	87-001-124-080	LED, SLZ-381C-02(NTSC 3. 58)
D916	87-001-124-080	LED, SLZ-381C-02(NTSC 4. 43)
D917	87-002-441-080	LED, SLZ-681C-02(AUTO TRACKING)
D918	87-001-123-080	LED, SLZ-981C-02(RECORD)
D919	87-002-441-080	LED, SLZ-681C-02(DIGITAL CONVERT)
S901	87-036-215-080	SW, TACT(POWER)
S902	87-036-215-080	SW, TACT(EJECT⏏)
S903	87-036-215-080	SW, TACT(STOP ■)
S904	87-036-215-080	SW, TACT(F FWD ▶▶)
S905	87-036-215-080	SW, TACT(REW ◀◀)
S906	87-036-215-080	SW, TACT(PLAY ▶)
S907	87-036-215-080	SW, TACT(PAUSE/STILL‖/▶◀)
S908	87-036-215-080	SW, TACT(RECORD ●)
S909	87-036-215-080	SW, TACT(SYSTEM)
S910	87-036-178-010	SW, SLIDE(AUTO TRACKING)
S911	82-234-644-010	SW, SLIDE(CONVERTER OUT)

=== HEAD AMP/AUDIO CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C651	★87-018-131-080	CAP, CERA-SOL U 1000P-50 B
C652	★87-015-695-080	CAP, ELECT 1-50 7L
C653	★87-018-213-080	CAP, CERA-SOL U 0. 047-50 F
C654	★87-018-213-080	CAP, CERA-SOL U 0. 047-50 F
C655	★87-015-695-080	CAP, ELECT 1-50 7L
C656	★87-015-681-080	CAP, ELECT 10-16 7L
C657	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C658	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C659	★87-015-677-080	CAP, ELECT 100-6. 3 7L
C660	★87-015-684-080	CAP, ELECT 47-16 7L
C661	★87-018-115-080	CAP, CERA-SOL U 47P-50 SL
C663	★87-018-117-080	CAP, CERA-SOL U 68P-50 SL
C666	★87-018-119-080	CAP, CERA-SOL U 100P-50 B
C667	★87-018-112-080	CAP, CERA-SOL U 30P-50 SL
C741	★87-018-123-080	CAP, CERA-SOL U 220P-50 B
C668	★87-018-125-080	CAP, CERA-SOL U 330P-50 B
C669	★87-018-107-080	CAP, CERA-SOL U 18P-50 SL
C670	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C671	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C672	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C673	★87-010-260-080	CAP, ELECT 47-25 SME
C674	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C675	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C676	★87-018-104-080	CAP, CERA-SOL U 10P-50 SL
C679	★87-018-118-080	CAP, CERA-SOL U 82P-50 B
C680	★87-018-114-080	CAP, CERA-SOL U 39P-50 SL
C701	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C702	★87-010-384-080	CAP, ELECT 100-25 SME
C703	★87-010-405-080	CAP, ELECT 10-50 SME
C704	★87-015-684-080	CAP, ELECT 47-16 7L
C711	★87-010-404-080	CAP, ELECT 4. 7-50 SME
C714	★87-010-404-080	CAP, ELECT 4. 7-50 SME
C721	★87-018-127-080	CAP, CERA-SOL U 470P-50 B
C725	★87-010-382-080	CAP, ELECT 22-25 SME
C731	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C732	★87-018-130-080	CAP, CERA-SOL U 820PF
C733	★87-018-195-080	CAP, CERA-SOL U 1200P-16 X
C734	★87-010-401-080	CAP, ELECT 1-50 SME
C735	★87-010-265-080	CAP, ELECT 33-16 SME
C737	★87-010-401-080	CAP, ELECT 1-50 SME
C743	★87-018-131-080	CAP, CERA-SOL U 1000P-50 B
C744	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C745	★87-015-684-080	CAP, ELECT 47-16 7L
C951	★87-018-121-080	CAP, CERA-SOL U 150P-50 B
C952	★87-018-121-080	CAP, CERA-SOL U 150P-50 B
C955	★87-018-131-080	CAP, CERA-SOL U 1000P-50 B
C956	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C957	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C958	★87-018-202-080	CAP, CERA-SOL U 6800P-16 X
C959	★87-018-134-080	CAP, CERA-SOL U 0. 01-16 Y
C960	★87-015-681-080	CAP, ELECT 10-16 7L
L651	★87-005-444-080	COIL, 100UH
L652	★87-003-149-080	COIL, 47UH
L654	★87-003-145-080	COIL, 8. 2UH LAL02
L655	★87-003-288-080	COIL, 180UH LAL02
L656	★87-003-147-080	COIL, 22UH
L657	★87-005-444-080	COIL, 100UH
L658	★87-003-150-080	COIL, 68UH LAL02
L659	★87-003-151-080	COIL, 82UH LAL02
L701	★87-005-239-080	COIL, 100UH
L710	★87-005-398-080	COIL, 8. 2MMH LHL06
L951	★87-003-149-080	COIL, 47UH
L952	★87-005-514-080	COIL, 8. 2UH J LAL02
T714	★80-JUB-681-010	COIL, OSC BIAS-70K

=== AUTO TRACKING CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C962	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C963	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
C964	★87-010-263-080	CAP, ELECT 100-10
C965	★87-010-263-080	CAP, ELECT 100-10
C966	★87-018-134-080	CAP, CERA-SOL U 0.01-16 Y
CL951	★87-030-198-080	RESONATOR, CERAMIC KBR-4.0MKS
L953	★87-003-149-080	COIL, 47UH

=== DIGITAL-1 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C60	★87-010-452-080	CAP, CHIP 1-16 F
C61	★87-010-452-080	CAP, CHIP 1-16 F
C62	★87-010-452-080	CAP, CHIP 1-16 F
C63	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C64	★87-010-197-080	CAP, CHIP S 0.01-25 B
C65	★87-010-197-080	CAP, CHIP S 0.01-25 B
C66	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C67	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C68	★87-010-197-080	CAP, CHIP S 0.01-25 B
C69	★87-010-197-080	CAP, CHIP S 0.01-25 B
C70	★87-010-197-080	CAP, CHIP S 0.01-25 B
C71	★87-010-197-080	CAP, CHIP S 0.01-25 B
C72	★87-010-197-080	CAP, CHIP S 0.01-25 B
C73	★87-010-197-080	CAP, CHIP S 0.01-25 B
C74	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C75	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C76	★87-010-197-080	CAP, CHIP S 0.01-25 B
C77	★87-010-315-080	CAP, CHIP S 27P-50 CH
C78	★87-010-315-080	CAP, CHIP S 27P-50 CH
C80	★87-010-315-080	CAP, CHIP S 27P-50 CH
C81	★87-010-315-080	CAP, CHIP S 27P-50 CH
C83	★87-010-197-080	CAP, CHIP S 0.01-25 B
C84	★87-010-197-080	CAP, CHIP S 0.01-25 B
C85	★87-010-197-080	CAP, CHIP S 0.01-25 B
C86	★87-010-197-080	CAP, CHIP S 0.01-25 B
C87	★87-010-197-080	CAP, CHIP S 0.01-25 B
C88	★87-010-452-080	CAP, CHIP 1-16 F
C89	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C90	★87-010-197-080	CAP, CHIP S 0.01-25 B
C91	★87-010-197-080	CAP, CHIP S 0.01-25 B
C92	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C93	★87-010-197-080	CAP, CHIP S 0.01-25 B
C94	★87-010-661-080	CAP, ELECT CHIP 10-16
C95	★87-010-197-080	CAP, CHIP S 0.01-25 B
C96	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C97	★87-010-197-080	CAP, CHIP S 0.01-25 B
C98	★87-010-197-080	CAP, CHIP S 0.01-25 B
C99	★87-010-197-080	CAP, CHIP S 0.01-25 B
C100	★87-010-322-080	CAP, CHIP S 100P-50 CH
C101	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C102	★87-010-197-080	CAP, CHIP S 0.01-25 B
C103	★87-010-196-080	CAP, CHIP S 0.1-25 F
C104	★87-010-156-080	CAP, CHIP S 15P-50 CH
C105	★87-010-178-080	CAP, CHIP S 1000P-50 B
C106	★87-010-154-080	CAP, CHIP S 10P-50 CH
C107	★87-010-197-080	CAP, CHIP S 0.01-25 B
C108	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C109	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C111	★87-010-197-080	CAP, CHIP S 0.01-25 B
C112	★87-010-175-080	CAP, CHIP S 560P-50 SL
C113	★87-010-956-080	CAP, CHIP S 0.068-25 B
C114	★87-010-196-080	CAP, CHIP S 0.1-25 F
C116	★87-012-157-080	CAP, CHIP S 330P-50 CH
C117	★87-010-322-080	CAP, CHIP S 100P-50 CH
D1	87-002-345-080	VARICAP, CHIP 1T363
EX3	★80-JUC-601-080	RESONATOR, CRYSTAL 14.31MHZ
FL3	★80-JU4-682-010	FILTER, MYV-251 3MLP
FL4	★87-003-291-080	FILTER, EMI DSS306 102M
FL5	★87-003-291-080	FILTER, EMI DSS306 102M
FL6	★87-003-291-080	FILTER, EMI DSS306 102M
FL7	★87-003-291-080	FILTER, EMI DSS306 102M
FL8	★87-003-291-080	FILTER, EMI DSS306 102M
FL9	★87-003-291-080	FILTER, EMI DSS306 102M
FL10	★87-003-291-080	FILTER, EMI DSS306 102M
FL11	★87-003-291-080	FILTER, EMI DSS306 102M
FL12	★87-003-291-080	FILTER, EMI DSS306 102M
FL13	★87-003-291-080	FILTER, EMI DSS306 102M
FL14	★87-003-291-080	FILTER, EMI DSS306 102M
L10	★87-005-547-080	COIL, 47UH J FLR25
L11	★87-005-547-080	COIL, 47UH J FLR25
L12	★87-005-547-080	COIL, 47UH J FLR25
L13	★87-005-547-080	COIL, 47UH J FLR25
L14	★87-005-547-080	COIL, 47UH J FLR25
L15	★87-005-547-080	COIL, 47UH J FLR25
L16	★87-005-547-080	COIL, 47UH J FLR25
L17	★87-005-522-080	COIL, CHIP 3.3UH NL3225
SFR100	★87-024-378-080	SFR, CHIP 330K
SFR101	★87-024-378-080	SFR, CHIP 330K
TC3	★87-011-192-080	CAP, TRIMMER CTZ30C
X4	★80-JUC-602-080	RESONATOR, CRYSTAL 17.73MHZ

=== DIGITAL-2 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C2	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C3	★87-010-197-080	CAP, CHIP S 0.01-25 B
C4	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C5	★87-010-452-080	CAP, CHIP 1-16 F
C6	★87-010-661-080	CAP, ELECT CHIP 10-16
C7	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C8	★87-010-197-080	CAP, CHIP S 0.01-25 B
C9	★87-010-197-080	CAP, CHIP S 0.01-25 B
C10	★87-010-197-080	CAP, CHIP S 0.01-25 B
C11	★87-010-180-080	CAP, CHIP S 1500P-50 B
C12	★87-010-661-080	CAP, ELECT CHIP 10-16
C13	★87-010-661-080	CAP, ELECT CHIP 10-16
C14	★87-010-661-080	CAP, ELECT CHIP 10-16
C16	★87-010-175-080	CAP, CHIP S 560P-50 SL
C17	★87-012-349-080	CAP, CHIP S 1000P-50 CH
C18	★87-010-197-080	CAP, CHIP S 0.01-25 B
C20	★87-010-197-080	CAP, CHIP S 0.01-25 B
C21	★87-010-452-080	CAP, CHIP 1-16 F
C22	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C23	★87-010-197-080	CAP, CHIP S 0.01-25 B
C24	★87-010-197-080	CAP, CHIP S 0.01-25 B
C25	★87-010-452-080	CAP, CHIP 1-16 F
C26	★87-010-154-080	CAP, CHIP S 10P-50 CH
C27	★87-010-154-080	CAP, CHIP S 10P-50 CH
C28	★87-010-197-080	CAP, CHIP S 0.01-25 B
C29	★87-010-154-080	CAP, CHIP S 10P-50 CH
C30	★87-010-312-080	CAP, CHIP S 15P-50 CH
C31	★87-010-197-080	CAP, CHIP S 0.01-25 B
C32	★87-010-197-080	CAP, CHIP S 0.01-25 B
C33	★87-010-197-080	CAP, CHIP S 0.01-25 B
C34	★87-010-178-080	CAP, CHIP S 1000P-50 B
C35	★87-010-178-080	CAP, CHIP S 1000P-50 B
C36	★87-010-194-080	CAP, CHIP S 0.047-25 F
C37	★87-010-194-080	CAP, CHIP S 0.047-25 F
C38	★87-010-450-080	CAP, CHIP 0.47-16 F

REF. NO.	PART NO.	DESCRIPTION
C39	★87-010-452-080	CAP, CHIP 1-16 F
C40	★87-010-779-080	CAP, ELECT CHIP 100-6.3
C41	★87-010-197-080	CAP, CHIP S 0.01-25 B
C42	★87-010-197-080	CAP, CHIP S 0.01-25 B
C43	★87-010-197-080	CAP, CHIP S 0.01-25 B
C44	★87-010-197-080	CAP, CHIP S 0.01-25 B
C45	★87-010-661-080	CAP, ELECT CHIP 10-16
C46	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C47	★87-010-665-080	CAP, ELECT CHIP 47-6.3
C48	★87-010-661-080	CAP, ELECT CHIP 10-16
C49	★87-010-661-080	CAP, ELECT CHIP 10-16
C50	★87-010-197-080	CAP, CHIP S 0.01-25 B
C120	★87-010-154-080	CAP, CHIP S 10P-50 CH
C121	★87-010-152-080	CAP, CHIP S 8P-50 CH
FL1	★80-JU4-681-010	FILTER, MZV-75D, 3MLP
FL2	★80-JU4-686-010	FILTER, MXV-703 3.9MBP
L1	★87-005-547-080	COIL, 47UH J FLR25
L2	★87-005-547-080	COIL, 47UH J FLR25
L5	★87-005-547-080	COIL, 47UH J FLR25
L6	★87-003-214-080	COIL, CHIP 33UH NL3225
SFR1	★87-024-063-080	SFR, CHIP 3.3K
SFR2	★87-024-131-080	SFR, CHIP 47K
SFR3	★87-024-131-080	SFR, CHIP 47K
SFR4	★87-024-131-080	SFR, CHIP 47K
SFR5	★87-024-063-080	SFR, CHIP 3.3K
SFR6	★87-024-063-080	SFR, CHIP 3.3K
TC1	★87-011-192-080	CAP, TRIMMER CTZ30C
TC2	★87-011-192-080	CAP, TRIMMER CTZ30C
X1	★80-JU1-676-080	RESONATOR, CRYSTAL 14.31MHZ
X2	★80-JU1-661-080	RESONATOR, CRYSTAL 17.73MHZ

=== DIGITAL-3 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C151	★87-010-152-080	CAP, CHIP S 8P-50 CH
C152	★87-012-155-080	CAP, CHIP S 180P-50 CH
C153	★87-010-196-080	CAP, CHIP S 0.1-25 F
C154	★87-010-452-080	CAP, CHIP 1-16 F
C155	★87-010-452-080	CAP, CHIP 1-16 F
C156	★87-010-452-080	CAP, CHIP 1-16 F
C157	★87-010-197-080	CAP, CHIP S 0.01-25 B
C158	★87-010-197-080	CAP, CHIP S 0.01-25 B
C159	★87-010-318-080	CAP, CHIP S 47P-50 CH
C160	★87-010-452-080	CAP, CHIP 1-16 F
C161	★87-010-196-080	CAP, CHIP S 0.1-25 F
C162	★87-010-197-080	CAP, CHIP S 0.01-25 B
C171	★87-010-152-080	CAP, CHIP S 8P-50 CH
C172	★87-012-155-080	CAP, CHIP S 180P-50 CH
C173	★87-010-196-080	CAP, CHIP S 0.1-25 F
C174	★87-010-452-080	CAP, CHIP 1-16 F
C175	★87-010-452-080	CAP, CHIP 1-16 F
C176	★87-010-452-080	CAP, CHIP 1-16 F
C177	★87-010-197-080	CAP, CHIP S 0.01-25 B
C178	★87-010-197-080	CAP, CHIP S 0.01-25 B
C179	★87-010-318-080	CAP, CHIP S 47P-50 CH
C180	★87-010-452-080	CAP, CHIP 1-16 F
C181	★87-010-196-080	CAP, CHIP S 0.1-25 F
C182	★87-010-197-080	CAP, CHIP S 0.01-25 B
C191	★87-010-661-080	CAP, ELECT CHIP 10-16
C192	★87-010-452-080	CAP, CHIP 1-16 F
L151	★87-005-306-080	COIL, CHIP 47UH
L152	★87-005-263-080	COIL, CHIP, 15UH ML3216
L171	★87-005-306-080	COIL, CHIP 47UH
L172	★87-005-263-080	COIL, CHIP, 15UH ML3216
L191	★87-005-263-080	COIL, CHIP, 15UH ML3216
SFR151	★87-024-130-080	SFR, CHIP 10K
SFR171	★87-024-130-080	SFR, CHIP 10K

=== BASE CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
CP1	S6-808-080-030	PHOTO(REEL) SENSOR ON1385
PCB-H	★S8-059-133-022	BASE PCB ASSY

=== RELAY-1 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
PCB-I	★S8-059-013-470	RELAY-1 PCB ASSY

=== RELAY-2 CIRCUIT BOARD SECTION ===

=== RELAY-3 CIRCUIT BOARD SECTION ===

=== RELAY-4 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
PCB-L	S8-059-013-050	RELAY-4 PCB ASSY

=== RELAY-5 CIRCUIT BOARD SECTION ===

=== SWITCH CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
PCB-N	★S8-059-163-330	SWITCH PCB ASSY (W/S 1,2,3)

=== START SENSOR CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
PCB-O	★S8-059-163-160	SENSOR PCB RM ASSY

=== END SENSOR CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
PCB-P	★S8-059-163-010	SENSOR PCB LM ASSY

=== LED CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
LED1	★S8-059-133-030	LED ASSY(W/PCB-Q)

=== ACE HEAD CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
ACEH	S6-204-150-060	ACE HEAD HV225211(W/PCB-R)

=== ERASE HEAD CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
FEH	S6-204-150-030	FULL ERASE HEAD(W/PCB-S)

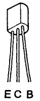
=== POWER-1 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
⚠C101	★S0-05C-001-010	CAP, FILM 0.22UF 250V
⚠F101	S0-05F-001-010	FUSE, 1.6A 250A
⚠J101	★S0-4E0-INL-ET0	CONN CCT9302-0101(AC)
⚠L101	★S1-2EL-001-010	COIL LF-4D-333

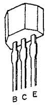
=== POWER-2 CIRCUIT BOARD SECTION ===

REF. NO.	PART NO.	DESCRIPTION
C102-1	★S0-5EC-010-210	CAP, CERA 4700PF 250V
C102-2	★S0-5EC-010-210	CAP, CERA 4700PF 250V
C102-3	★S0-5EC-010-210	CAP, CERA 4700PF 250V
C104	★S1-222-020-000	CAP, ELECT 150UF 400V
C105	★80-05C-001-050	CAP, FILM 0.047UF 630V
C106	★S0-05C-001-060	CAP, CERA 100PF 1KV
C107	★S0-05C-001-070	CAP, ELECT 1UF 400V
C201	★S0-05C-002-010	CAP, ELECT 0.047UF 60V
C202	★87-010-029-010	CAP, ELECT 1UF 50V
C203	★S0-05C-002-030	CAP, ELECT 680UF 25V
C204	★87-010-385-010	CAP, ELECT 220UF 25V
C205	★87-010-429-010	CAP, ELECT 680UF 16V
C206	★S1-9A0-C02-090	CAP, ELECT 1200UF 10V

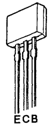
REF. NO.	PART NO.	DESCRIPTION
C207	★87-010-381-010	CAP, ELECT 330UF 16V
C208	★87-015-869-010	CAP, ELECT 100UF 16V
C209	★87-010-221-010	CAP, ELECT 470UF 10V
C210	★87-010-263-010	CAP, ELECT 100UF
C211	★87-010-263-010	CAP, ELECT 100UF
HIC101	S0-05H-101-010	HIC, MA2830 F4005
L201	★S0-05L-002-010	COIL, 39UH RD0807A40
L202	★S0-05L-002-010	COIL, 39UH RD0807A40
PC101	S0-05P-C01-010	PHOTO COUPLER ON3171 R
R101	★83-131-616-010	RES, 2.2 3W
R105-1	★87-025-071-010	RES, MF 47 1W
R105-2	★87-025-071-010	RES, MF 47 1W
R106-1	★87-025-073-010	RES, MF 150 1W
R106-2	★87-025-073-010	RES, MF 150 1W
⚠R107	S1-2ER-001-070	RES, FUSE 330
R201	S0-05R-002-010	RES, MF 240 1/2W
R202	S0-05R-002-020	RES, MF 330
R203	★87-025-306-010	RES, MF 5.6K 1/4W
R204	★87-025-307-010	RES, MF 1.5K 1/4W
R209	S1-9A0-R02-070	RES, 1K 1/4W
R211	S1-9A0-R02-070	RES, 1K 1/4W
R214	★87-025-245-010	RES, MF 820 1W
RV201	★S0-4ER-V02-010	SFR 1K 1-10W
T101	★S0-4ET-001-010	TRANSFORMER T-9009-3
::: MISCELLANEOUS :::		
	S8-059-010-190	UPPER DRUM(W/VIDEO HEAD)
	S8-059-013-040	LOWER DRUM ASSY
DS1	★S6-808-080-040	DEW SENSOR EYH-S10R
M1	S6-004-090-010	CYLINDER MOTOR TM82
M2	S8-059-073-020	CAPSTAN MOTOR ASSY
M3	S8-059-113-010	LOADING MOTOR ASSY
S4	S6-401-011-510	LEAF SW(REC PREVENTION)



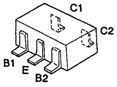
2SA933
2SC1740
2SC2274



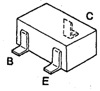
2SA1048



DTA144ES
DTC144ES
DTC114ES
DTC114TS



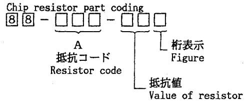
FMG2
FMA2



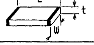
2SA1037
2SC2223
2SC2412
DTA144EK
DTC114EK
DTC144EK

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip resistor part coding

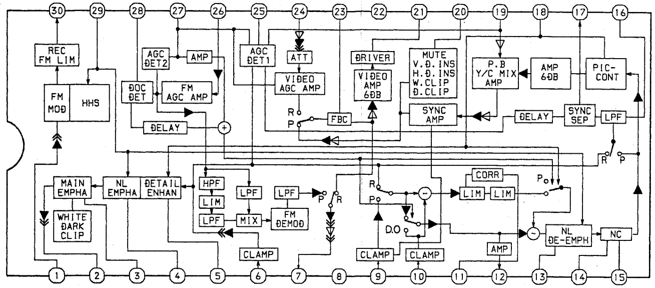

88 - □□□ - □□□
A
抵抗コード
Resistor code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

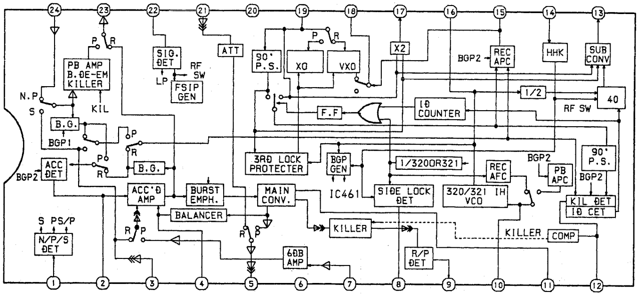
Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm)				Resistor Code : A 抵抗コード : A
				Form/外形	L	W	t	
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

IC BLOCK DIAGRAM

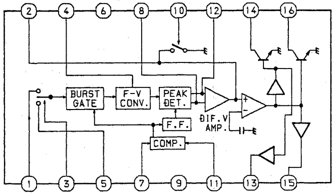
IC,LA7323


REC FM LIM
FM MOD
HHS
AGC DET2
AMP
DOC DET
FM AGC AMP
DELAY
AGC DET1
ATT
VIDEO AGC AMP
R
P
FBC
DRIVER
VIDEO AMP 6DB
MUTE V.D.INS H.D.INS W.CLIP D.CLIP
SYNC AMP
P.B Y/C MIX AMP
AMP 6DB
PIC-CONT
DELAY
SYNC SEP
LPF
MAIN EMPHA
WHITE DARK CLIP
NL EMPHA
DETAIL ENHAN
HPF
LIM
LPF
LPF
MIX
LPF
FM DEMOD
CLAMP
CLAMP
CLAMP
D.O
CORR
LIM
LIM
AMP
NL DE-EMPH
NC

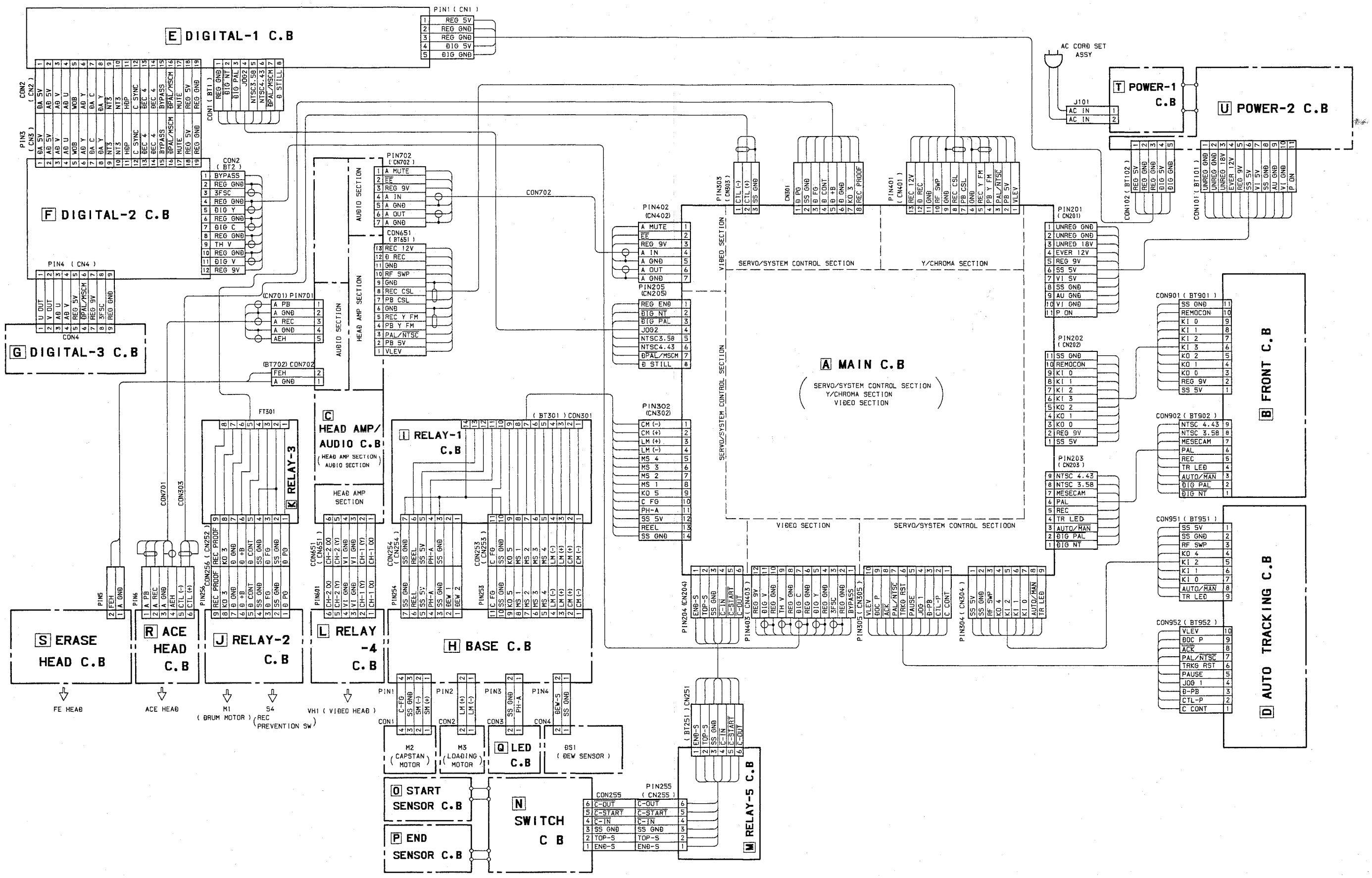
IC,LA7333


PB AMP B.DE-EM KILLER
N.P
S
KIL
B.G.
BGP1
ACC DET
BGP2
B.G.
SIG. DET
RF SW
LP
FSIP GEN
ATT
90° P.S.
XO
VXO
X2
F.F
1D COUNTER
BGP2
REC APC
HHK
SUB CONV
1/2
40
RF SW
3RD LOCK PROTECTER
BGP GEN
IC461
1/320OR321
REC AFC
PB APC
90° P.S.
BGP2
ACC'D AMP
BURST EMPH.
MAIN CONV.
BALANCER
SIDE LOCK DET
320/321 IH VCO
KIL DET
1D CET
KILLER
KILLER
COMP
S PS/P
N/P/S DET
6DB AMP
R/P DET

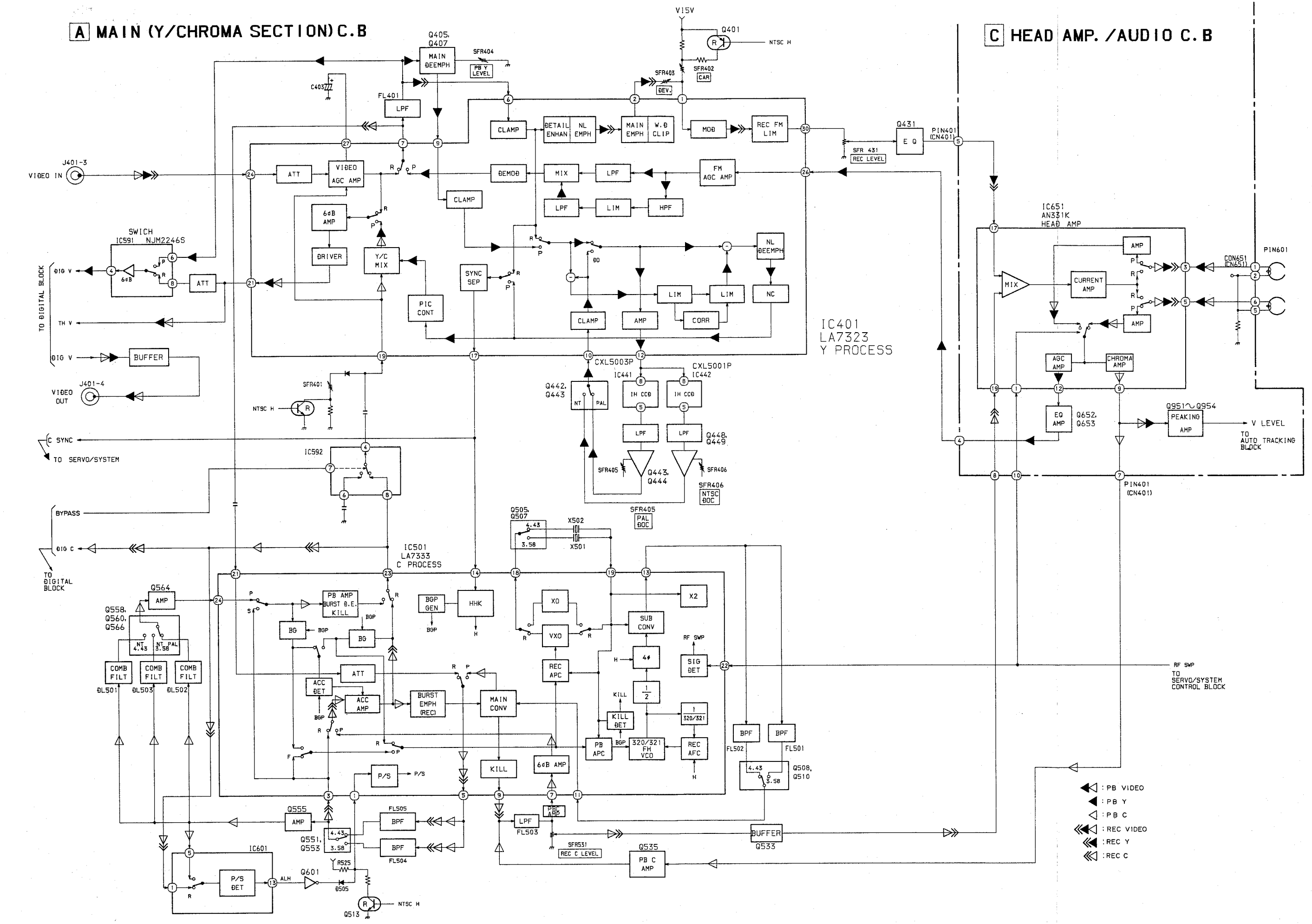
IC,LA7311


BURST GATE
F-V CONV.
PEAK DET.
F.F.
COMP.
DIF.V AMP.

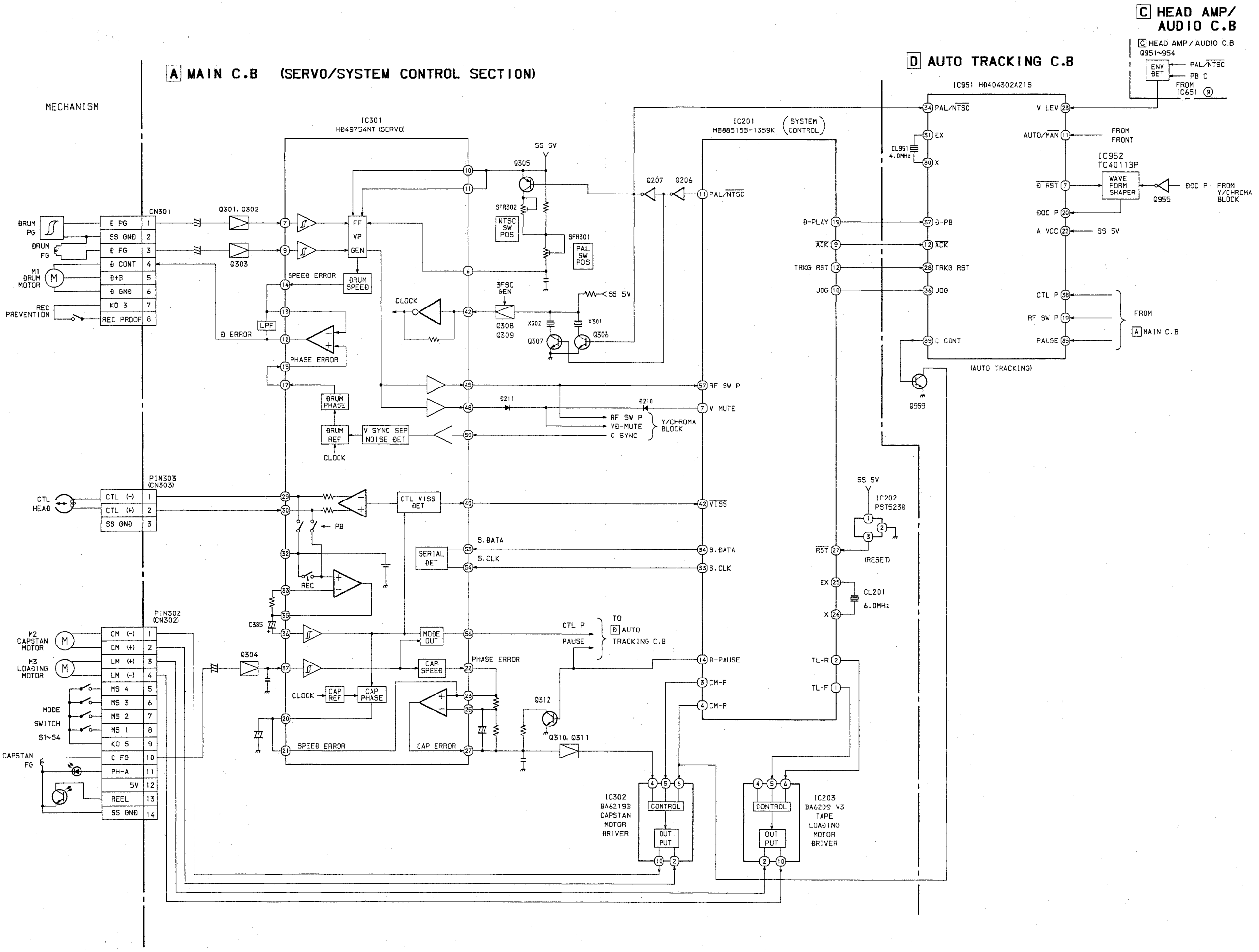
WIRE HARNESS DIAGRAM


E DIGITAL-1 C.B
PIN1 (CN1)
1 REG 5V
2 REG GND
3 REG GND
4 ÐIG 5V
5 ÐIG GND
CON2 (CN2)
PIN3 (CN3)
CON1 (BT1)
F DIGITAL-2 C.B
CON2 (BT2)
1 BYPASS
2 REG GND
3 3FSC
4 REG GND
5 ÐIG Y
6 REG GND
7 ÐIG C
8 REG GND
9 TH V
10 REG GND
11 ÐIG V
12 REG 9V
PIN4 (CN4)
CON4
G DIGITAL-3 C.B
PIN702 (CN702)
1 A MUTE
2 EE
3 REG 9V
4 A IN
5 A GND
6 A OUT
7 A GND
CON651 (BT651)
CON702
AUDIO SECTION
HEAD AMP SECTION
(CN701) PIN701
1 A PB
2 A GND
3 A REC
4 A GND
5 AEH
(BT702) CON702
2 FEH
1 A GND
C HEAD AMP/ AUDIO C.B
(HEAD AMP SECTION AUDIO SECTION)
FT301
K RELAY-3
I RELAY-1 C.B
(BT301) CON301
CON701
CON303
CON256 (CN256)
PIN256
CON651 (CN651)
PIN651
CON254 (CN254)
PIN254
CON253 (CN253)
PIN253
PIN5
PIN6
S ERASE HEAD C.B
R ACE HEAD C.B
J RELAY-2 C.B
L RELAY -4 C.B
H BASE C.B
FE HEAD
ACE HEAD
M1 (DRUM MOTOR)
S4 (REC PREVENTION SW)
VH1 (VIDEO HEAD)
PIN1
PIN2
PIN3
PIN4
CON1
CON2
CON3
CON4
M2 (CAPSTAN MOTOR)
M3 (LOADING MOTOR)
Q LED C.B
DS1 (DEW SENSOR)
O START SENSOR C.B
P END SENSOR C.B
N SWITCH C B
CON255
PIN255 (CN255)
6 C-OUT
5 C-START
4 C-IN
3 SS GND
2 TOP-S
1 END-S
M RELAY-5 C.B
(BT251) CN251
PIN204 (CN204)
PIN403 (CN403)
PIN305 (CN305)
PIN304 (CN304)
PIN402 (CN402)
PIN205 (CN205)
PIN302 (CN302)
PIN303 (CN303)
CN301
PIN401 (CN401)
PIN201 (CN201)
PIN202 (CN202)
PIN203 (CN203)
VIDEO SECTION
SERVO/SYSTEM CONTROL SECTION
Y/CHROMA SECTION
A MAIN C.B
(SERVO/SYSTEM CONTROL SECTION Y/CHROMA SECTION VIDEO SECTION)
AC CORD SET ASSY
J101
1 AC IN
2 AC IN
T POWER-1 C.B
U POWER-2 C.B
CON102 (BT102)
CON101 (BT101)
CON901 (BT901)
CON902 (BT902)
B FRONT C.B
CON951 (BT951)
CON952 (BT952)
D AUTO TRACKING C.B

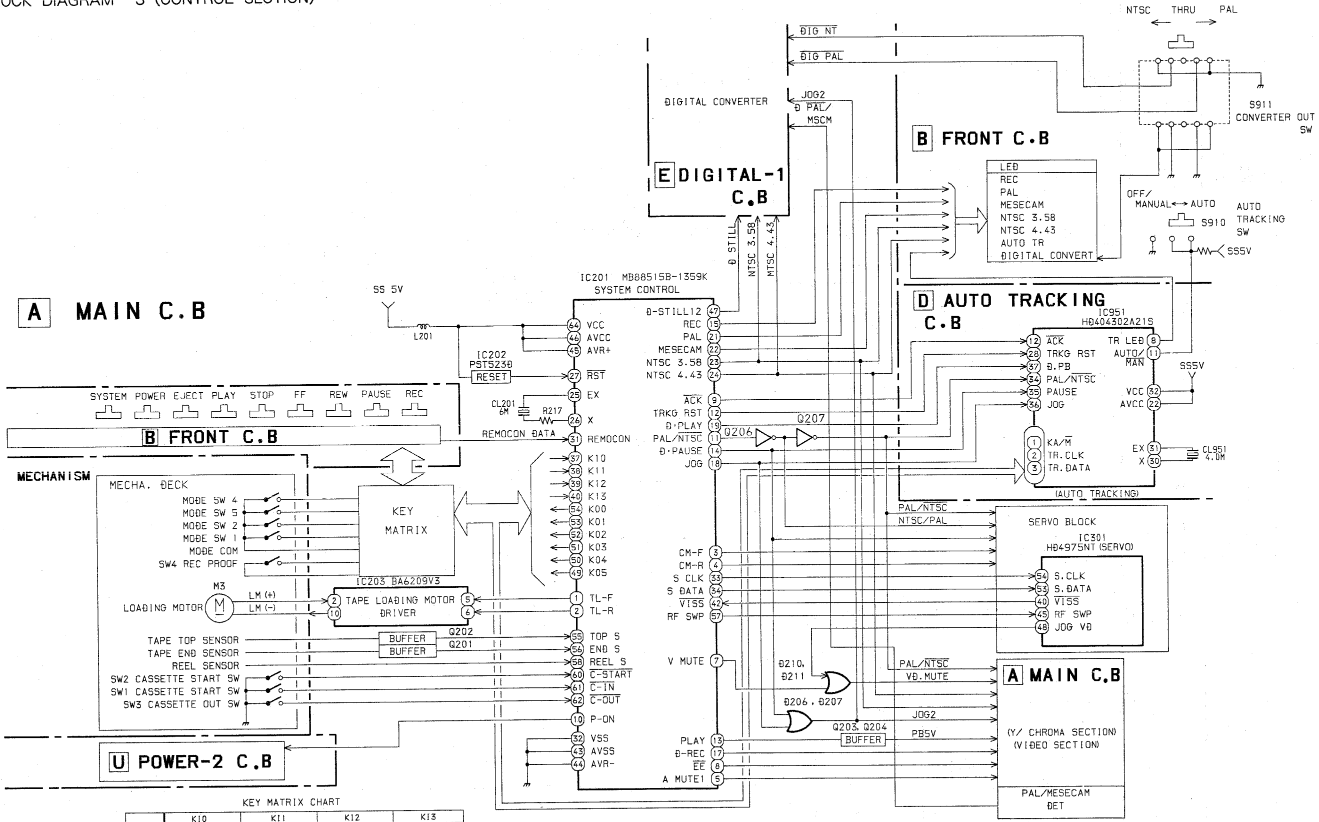
BLOCK DIAGRAM – 1 (VIDEO SECTION)


A MAIN (Y/CHROMA SECTION) C.B
C HEAD AMP. /AUDIO C.B
V15V
Q401
NTSC H
Q405, Q407
MAIN DEEMPH
SFR404
PB Y LEVEL
SFR402
CAR
SFR403
DEV.
C403
FL401
LPF
CLAMP
DETAIL ENHAN
NL EMPH
MAIN EMPH
W.D CLIP
MOD
REC FM LIM
Q431
E Q
PIN401 (CN401)
SFR 431
REC LEVEL
J401-3
VIDEO IN
ATT
VIDEO AGC AMP
DEMOD
MIX
LPF
FM AGC AMP
HPF
LIM
6dB AMP
DRIVER
Y/C MIX
SYNC SEP
PIC CONT
NL DEEMPH
NC
CORR
AMP
IC401
LA7323
Y PROCESS
SWICH
IC591 NJM2246S
DIG V
TH V
TO DIGITAL BLOCK
BUFFER
J401-4
VIDEO OUT
SFR401
NTSC H
C SYNC
TO SERVO/SYSTEM
IC592
BYPASS
DIG C
TO DIGITAL BLOCK
CXL5003P
IC441
CXL5001P
IC442
Q442, Q443
NT PAL
1H CCD
Q448, Q449
SFR405
Q443, Q444
SFR406
NTSC DOC
PAL DOC
IC651
AN331K
HEAD AMP
CURRENT AMP
AGC AMP
CHROMA AMP
EQ AMP
Q652, Q653
PIN601
CON651 (CN651)
Q951~Q954
PEAKING AMP
V LEVEL
TO AUTO TRACKING BLOCK
PIN401 (CN401)
Q505, Q507
4.43
3.58
X502
X501
IC501
LA7333
C PROCESS
Q564
Q558, Q560, Q566
NT 4.43
NT PAL 3.58
COMB FILT
DL501
DL503
DL502
PB AMP BURST D.E. KILL
BG
BGP
BGP GEN
HHK
H
XO
VXO
X2
SUB CONV
4ϕ
1/2
1/320/321
320/321 FH VCO
REC APC
REC AFC
PB APC
KILL DET
SIG DET
RF SWP
TO SERVO/SYSTEM CONTROL BLOCK
ACC DET
ACC AMP
BURST EMPH (REC)
MAIN CONV
KILL
6dB AMP
P/S
BPF
FL502
FL501
Q508, Q510
Q555
FL505
FL504
Q551, Q553
R525
LPF
FL503
PB APC
SFR531
REC C LEVEL
BUFFER
Q533
Q535
PB C AMP
IC601
P/S DET
ALH
Q601
D505
Q513
: PB VIDEO
: PB Y
: PB C
: REC VIDEO
: REC Y
: REC C

BLOCK DIAGRAM – 2 (SERVO/SYSTEM CONTROL SECTION)


MECHANISM
A MAIN C.B (SERVO/SYSTEM CONTROL SECTION)
D AUTO TRACKING C.B
C HEAD AMP/ AUDIO C.B
C HEAD AMP / AUDIO C.B
Q951~954
ENV DET
PAL/NTSC
PB C
FROM IC651 ⑨
IC301 HD49754NT (SERVO)
IC201 MB88515B-1359K (SYSTEM CONTROL)
IC951 HD404302A21S
DRUM PG
DRUM FG
M1 DRUM MOTOR
REC PREVENTION
CN301
D PG
SS GND
D FG
D CONT
D+B
D GND
KO 3
REC PROOF
Q301, Q302
Q303
SS 5V
Q305
SFR302
NTSC SW POS
SFR301
PAL SW POS
Q207
Q206
PAL/NTSC
FF
VP
GEN
SPEED ERROR
DRUM SPEED
CLOCK
3FSC GEN
Q308 Q309
X302
X301
Q307
Q306
LPF
D ERROR
PHASE ERROR
DRUM PHASE
DRUM REF
V SYNC SEP NOISE DET
CLOCK
D211
D210
RF SW P
V MUTE
RF SW P
VD-MUTE
C SYNC
Y/CHROMA BLOCK
PIN303 (CN303)
CTL HEAD
CTL (-)
CTL (+)
SS GND
PB
CTL VISS DET
VISS
S.DATA
S.CLK
SERIAL DET
REC
C385
PIN302 (CN302)
M2 CAPSTAN MOTOR
M3 LOADING MOTOR
MODE SWITCH S1~S4
CAPSTAN FG
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
C FG
PH-A
5V
REEL
SS GND
Q304
MODE OUT
CAP SPEED
CAP REF
CAP PHASE
CTL P
PAUSE
TO D AUTO TRACKING C.B
PHASE ERROR
CAP ERROR
Q312
Q310, Q311
D-PAUSE
CM-F
CM-R
IC302 BA6219B CAPSTAN MOTOR DRIVER
CONTROL
OUT PUT
IC203 BA6209-V3 TAPE LOADING MOTOR DRIVER
CONTROL
OUT PUT
D-PLAY
ACK
TRKG RST
JOG
RST
(RESET)
SS 5V
IC202 PST523D
EX
X
CL201 6.0MHz
TL-R
TL-F
CL951 4.0MHz
EX
X
D-PB
ACK
TRKG RST
JOG
C CONT
Q959
(AUTO TRACKING)
V LEV
AUTO/MAN
FROM FRONT
IC952 TC4011BP
D RST
WAVE FORM SHAPER
Q955
DOC P
FROM Y/CHROMA BLOCK
DOC P
A VCC
SS 5V
CTL P
RF SW P
PAUSE
FROM A MAIN C.B

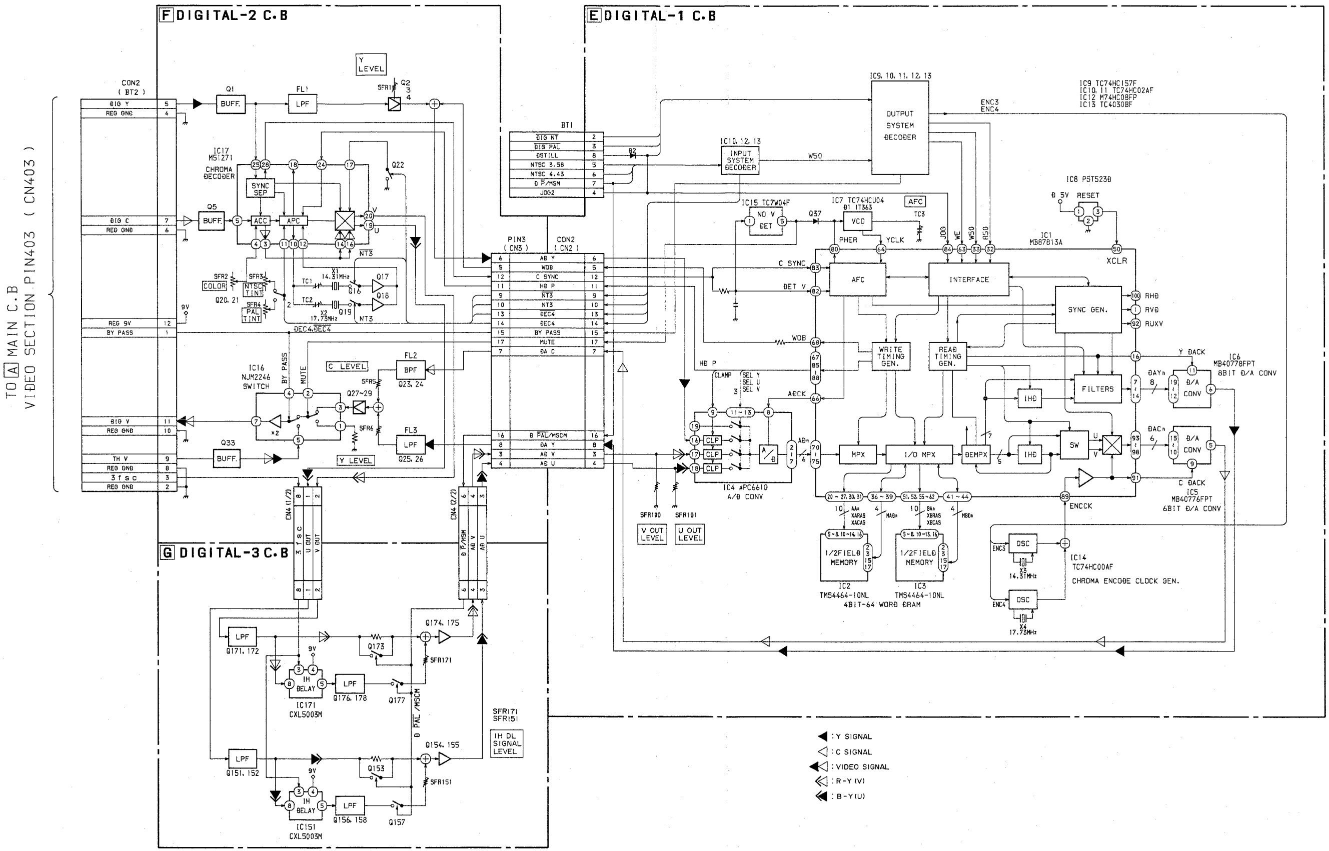
BLOCK DIAGRAM – 3 (CONTROL SECTION)


DIG NT
DIG PAL
DIGITAL CONVERTER
JOG2
D PAL/MSCM
E DIGITAL-1 C.B
D STILL
NTSC 3.58
NTSC 4.43
NTSC THRU PAL
S911 CONVERTER OUT SW
B FRONT C.B
LED
REC
PAL
MESECAM
NTSC 3.58
NTSC 4.43
AUTO TR
DIGITAL CONVERT
OFF/MANUAL ↔ AUTO
S910
AUTO TRACKING SW
SS5V
A MAIN C.B
SS 5V
L201
IC202 PST523D
RESET
CL201 6M
R217
IC201 MB88515B-1359K SYSTEM CONTROL
64 VCC
46 AVCC
45 AVR+
27 RST
25 EX
26 X
31 REMOCON
37 KI0
38 KI1
39 KI2
40 KI3
54 KO0
53 KO1
52 KO2
51 KO3
50 KO4
49 KO5
1 TL-F
2 TL-R
55 TOP S
56 END S
58 REEL S
60 C-START
61 C-IN
62 C-OUT
10 P-ON
32 VSS
43 AVSS
44 AVR-
D-STILL12 47
REC 15
PAL 21
MESECAM 22
NTSC 3.58 23
NTSC 4.43 24
ACK 9
TRKG RST 12
D·PLAY 19
PAL/NTSC 11
D·PAUSE 14
JOG 18
CM-F 3
CM-R 4
S CLK 33
S DATA 34
VISS 42
RF SWP 57
V MUTE 7
PLAY 13
D-REC 17
EE 8
A MUTE1 5
Q206
Q207
SYSTEM POWER EJECT PLAY STOP FF REW PAUSE REC
B FRONT C.B
REMOCON DATA
MECHANISM
MECHA. DECK
MODE SW 4
MODE SW 5
MODE SW 2
MODE SW 1
MODE COM
SW4 REC PROOF
KEY MATRIX
IC203 BA6209V3
M3
LOADING MOTOR
LM (+)
LM (–)
TAPE LOADING MOTOR DRIVER
2
10
5
6
TAPE TOP SENSOR
TAPE END SENSOR
REEL SENSOR
SW2 CASSETTE START SW
SW1 CASSETTE START SW
SW3 CASSETTE OUT SW
BUFFER
BUFFER
Q202
Q201
U POWER-2 C.B
D AUTO TRACKING C.B
IC951 HD404302A21S
12 ACK
28 TRKG RST
37 D.PB
34 PAL/NTSC
35 PAUSE
36 JOG
TR LED 8
AUTO/MAN 11
VCC 32
AVCC 22
1 KA/M
2 TR.CLK
3 TR.DATA
EX 31
X 30
CL951 4.0M
(AUTO TRACKING)
PAL/NTSC
NTSC/PAL
SERVO BLOCK
IC301 HD49755NT (SERVO)
54 S.CLK
53 S.DATA
40 VISS
45 RF SWP
48 JOG VD
D210, D211
D206, D207
Q203, Q204
BUFFER
PAL/NTSC
VD.MUTE
JOG2
PB5V
A MAIN C.B
(Y/ CHROMA SECTION)
(VIDEO SECTION)
PAL/MESECAM DET

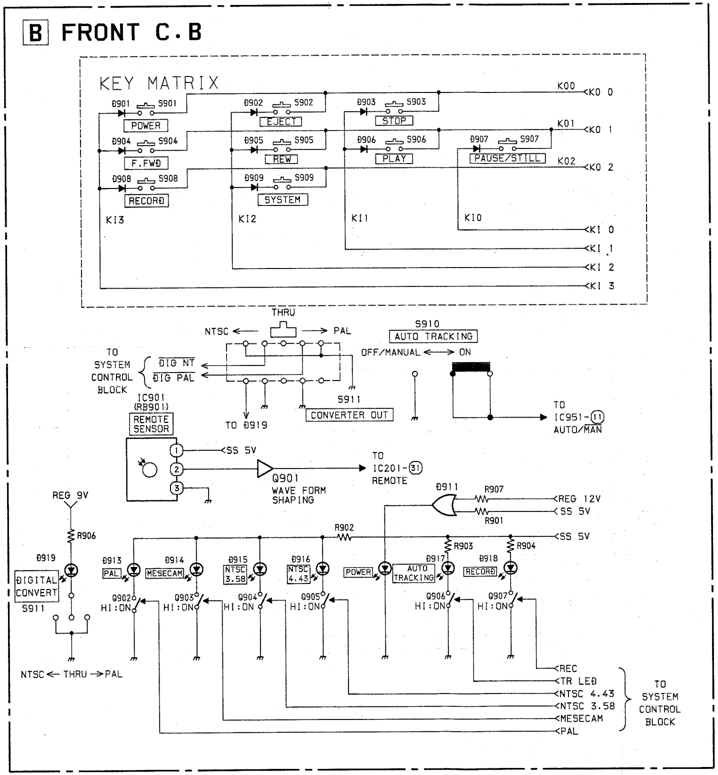
KEY MATRIX CHART

	KI0	KI1	KI2	KI3
KO0	K·TEST	K·STOP	K·EJECT	K·POWER
KO1	K·PAUSE/STILL	K·PLAY	K·REW	K·FF
KO2	K·TRACKING –	K·TRACKING +	K·SYSTEM	K·REC
KO3	REC MODE	VCR	REC PROOF	K·REPEAT
KO4	TRACKING –	TRACKING +	TR·AUTO/MAN	PAL/MESECAM
KO5	MODE SW 1	MODE SW 2	MODE SW 3	MODE SW 4

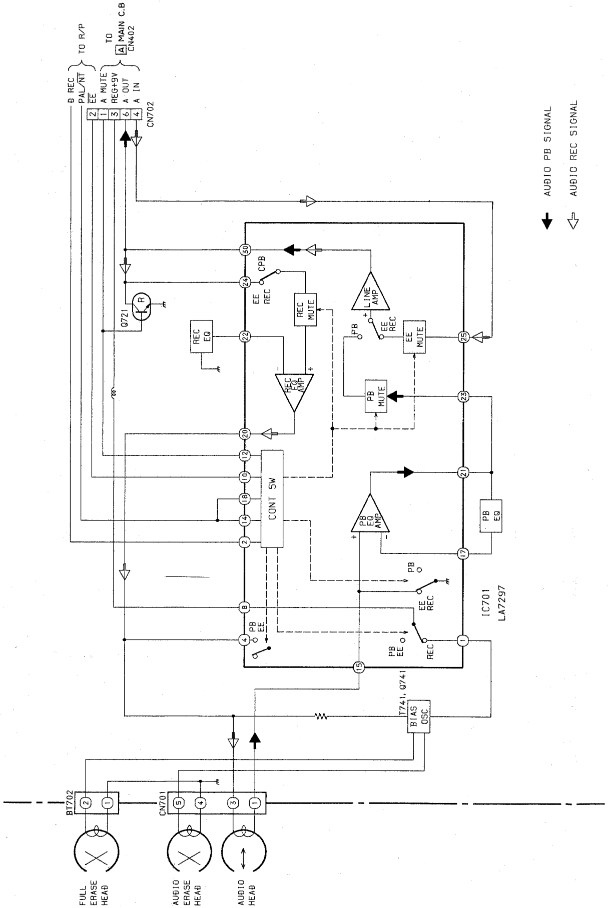
BLOCK DIAGRAM – 4 (DIGITAL SECTION)



TO A MAIN C.B VIDEO SECTION PIN403 (CN403)
F DIGITAL-2 C.B
E DIGITAL-1 C.B
G DIGITAL-3 C.B
CON2 (BT2)
DIG Y
REG GND
DIG C
REG 9V
BY PASS
DIG V
TH V
3fsc
Q1 BUFF.
FL1 LPF
Y LEVEL
SFR1
Q2 3 4
IC17 M51271 CHROMA DECODER
SYNC SEP
ACC
APC
Q22
Q5 BUFF.
NT3
SFR2 COLOR
SFR3 NTSC TINT
SFR4 PAL TINT
Q20, 21
X1 14.31MHz
X2 17.73MHz
TC1
TC2
Q16
Q17
Q18
Q19
DEC4, DEC4
IC16 NJM2246 SWITCH
BY PASS
MUTE
C LEVEL
FL2 BPF
SFR5
Q23, 24
Q27~29
SFR6
FL3 LPF
Q25, 26
Y LEVEL
Q33 BUFF.
BT1
DIG NT
DIG PAL
DSTILL
NTSC 3.58
NTSC 4.43
D P/MSM
JOG2
D2
PIN3 (CN3)
CON2 (CN2)
AD Y
WDB
C SYNC
HD P
NT3
DEC4
BY PASS
MUTE
DA C
D PAL/MSCM
DA Y
AD V
AD U
CN4 (1/2)
3fsc
U OUT
V OUT
CN4 (2/2)
D P/MSM
AD V
AD U
LPF
Q171, 172
Q173
Q174, 175
SFR171
9V
1H DELAY
IC171 CXL5003M
LPF Q176, 178
Q177
D PAL/MSCM
SFR171 SFR151
1H DL SIGNAL LEVEL
LPF Q151, 152
Q153
Q154, 155
SFR151
1H DELAY
IC151 CXL5003M
LPF Q156, 158
Q157
IC9, 10, 11, 12, 13
OUTPUT SYSTEM DECODER
IC9 TC74HC157F
IC10, 11 TC74HC02AF
IC12 M74HC08FP
IC13 TC4030BF
ENC3 ENC4
IC10, 12, 13 INPUT SYSTEM DECODER
W50
IC6 PST523D
D 5V RESET
IC15 TC7W04F
NO V DET
Q37
IC7 TC74HCU04
D1 1T363
VCO
AFC
TC3
PHER
YCLK
JOG
WE
W50
R50
IC1 MB87813A
XCLR
C SYNC
DET V
AFC
INTERFACE
SYNC GEN.
RHD
RVD
RUXV
WDB
WRITE TIMING GEN.
READ TIMING GEN.
HD P
CLAMP
SEL Y
SEL U
SEL V
ADCK
Y DACK
IC6 MB40778FPT 8BIT D/A CONV
DAYn
D/A CONV
FILTERS
1HD
CLP
A/D
ADn
MPX
I/O MPX
DEMPX
SW
DACn
C DACK
IC5 MB40776FPT 6BIT D/A CONV
ENCCK
IC4 µPC661G A/D CONV
SFR100
SFR101
V OUT LEVEL
U OUT LEVEL
AAn XARAS XACAS
MABn
BAn XBRAS XBCAS
MBDn
1/2FIELD MEMORY
IC2 TMS4464-10NL
IC3 TMS4464-10NL
4BIT-64 WORD DRAM
OSC
X3 14.31MHz
IC14 TC74HC00AF
CHROMA ENCODE CLOCK GEN.
OSC
X4 17.73MHz
◀ : Y SIGNAL
◁ : C SIGNAL
◀◁ : VIDEO SIGNAL
◁◁ : R-Y (V)
◀◀ : B-Y (U)

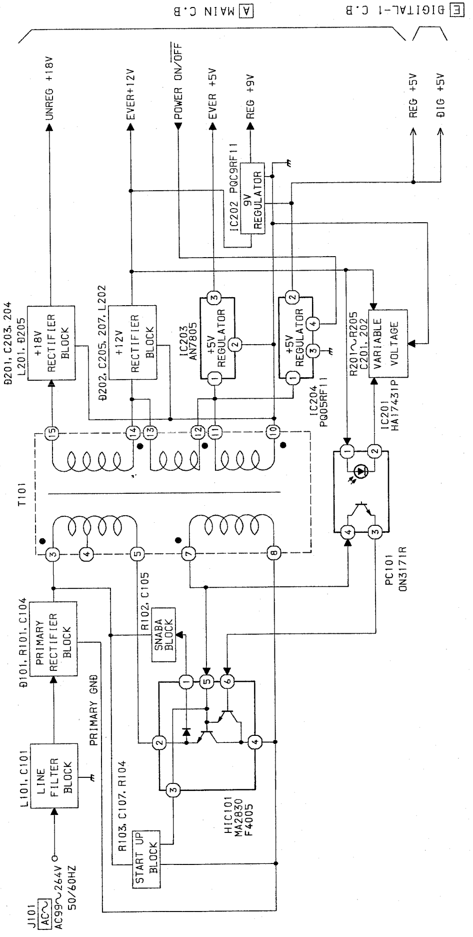

B FRONT C.B
KEY MATRIX
Ð901 S901 POWER
Ð902 S902 EJECT
Ð903 S903 STOP
Ð904 S904 F.FWÐ
Ð905 S905 REW
Ð906 S906 PLAY
Ð907 S907 PAUSE/STILL
Ð908 S908 RECORÐ
Ð909 S909 SYSTEM
K00
K01
K02
KO 0
KO 1
KO 2
KI3
KI2
KI1
KI0
KI 0
KI 1
KI 2
KI 3
THRU
NTSC
PAL
TO SYSTEM CONTROL BLOCK
ÐIG NT
ÐIG PAL
S910
AUTO TRACKING
OFF/MANUAL ON
TO ÐIG19
S911
CONVERTER OUT
TO IC951-⑪ AUTO/MAN
IC901 (RB901)
REMOTE SENSOR
①
②
③
SS 5V
Q901 WAVE FORM SHAPING
TO IC201-㉛ REMOTE
Ð911
R907
R901
REG 12V
SS 5V
REG 9V
R906
R902
R903
R904
SS 5V
Ð919
DIGITAL CONVERT
S911
Ð913 PAL
Ð914 MESECAM
Ð915 NTSC 3.58
Ð916 NTSC 4.43
POWER
AUTO TRACKING
Ð917
Ð918 RECORÐ
Q902 HI:ON
Q903 HI:ON
Q904 HI:ON
Q905 HI:ON
Q906 HI:ON
Q907 HI:ON
NTSC ← THRU → PAL
REC
TR LEÐ
NTSC 4.43
NTSC 3.58
MESECAM
PAL
TO SYSTEM CONTROL BLOCK

BLOCK DIAGRAM – 6 (AUDIO/POWER UNIT SECTION)



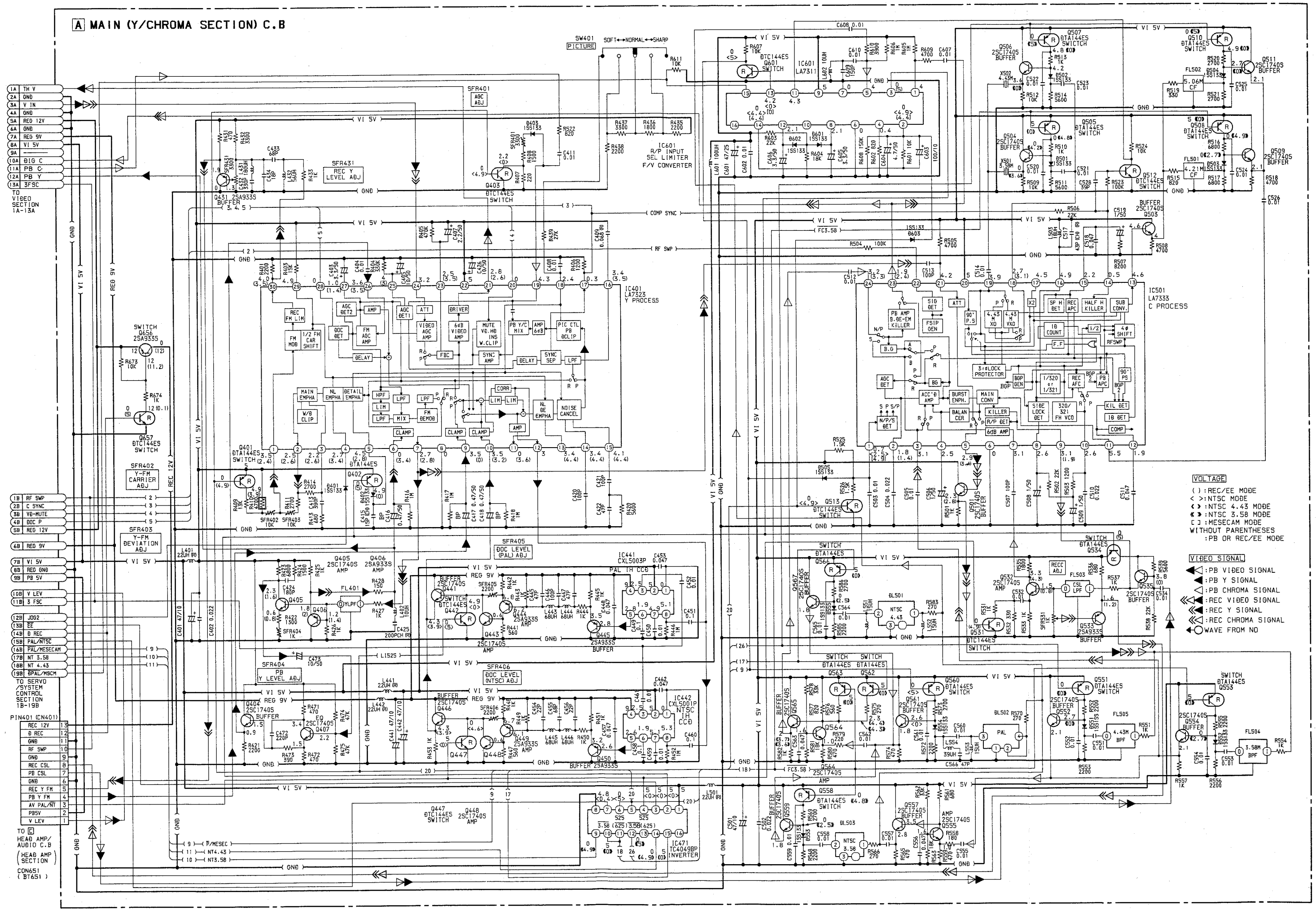
Ð REC
PAL/NT
EE
A MUTE
REG+9V
A OUT
A IN
TO R/P
TO A MAIN C.B CN402
CN702
AUDIO PB SIGNAL
AUDIO REC SIGNAL
Q721
REC EQ
REC MUTE
REC EQ AMP
CPB
EE REC
LINE AMP
PB
EE MUTE
PB MUTE
CONT SW
PB EQ AMP
PB EQ
PB EE
REC
IC701 LA7297
T741, Q741
BIAS OSC
BT702
CN701
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO HEAD

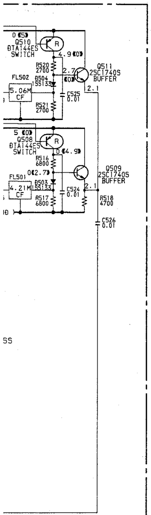
POWER (POWER SECTION) C.B



A MAIN C.B
E DIGITAL-1 C.B
UNREG +18V
EVER+12V
POWER ON/OFF
EVER +5V
REG +9V
REG +5V
ÐIG +5V
IC202 PQ09RF11
9V REGULATOR
Ð201, C203, 204 L201, Ð205
+18V RECTIFIER BLOCK
Ð202, C205, 207, L202
+12V RECTIFIER BLOCK
IC203 AN7805
+5V REGULATOR
+5V REGULATOR
IC204 PQ05RF11
R201~R205 C201, 202
VARIABLE VOLTAGE
IC201 HA17431P
T101
PC101 ON3171R
Ð101, R101, C104
PRIMARY RECTIFIER BLOCK
R102, C105
SNABA BLOCK
PRIMARY GNÐ
L101, C101
LINE FILTER BLOCK
J101 AC~ AC99~264V 50/60HZ
R103, C107, R104
START UP BLOCK
HIC101 MA2830 F4005

SCHEMATIC DIAGRAM – 1 (VIDEO SECTION)

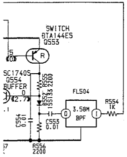

A MAIN (Y/CHROMA SECTION) C.B
1A TH V
2A GND
3A V IN
4A GND
5A REG 12V
6A GND
7A REG 9V
8A VI 5V
9A ——
10A DIG C
11A PB C
12A PB Y
13A 3FSC
TO VIDEO SECTION 1A-13A
1B RF SWP
2B C SYNC
3B VD-MUTE
4B DOC P
5B REG 12V
6B REG 9V
7B VI 5V
8B REG GND
9B PB 5V
10B V LEV
11B 3 FSC
12B JOG2
13B EE
14B D REC
15B PAL/NTSC
16B PAL/MESECAM
17B NT 3.58
18B NT 4.43
19B DPAL/MSCM
TO SERVO /SYSTEM CONTROL SECTION 1B-19B
PIN401 (CN401)
13 REC 12V
12 D REC
11 GND
10 RF SWP
9 GND
8 REC CSL
7 PB CSL
6 GND
5 REC Y FM
4 PB Y FM
3 AV PAL/NT
2 PB5V
1 V LEV
TO C HEAD AMP/ AUDIO C.B (HEAD AMP SECTION) CON651 (BT651)
SW401 PICTURE SOFT NORMAL SHARP
SFR401 AGC ADJ
SFR431 REC Y LEVEL ADJ
Q431 2SA933S BUFFER
Q403 DTC144ES SWITCH
IC601 R/P INPUT SEL LIMITER F/V CONVERTER
IC601 LA7311
Q601 DTC144ES SWITCH
IC401 LA7323 Y PROCESS
SWITCH Q656 2SA933S
Q657 DTC144ES SWITCH
SFR402 Y-FM CARRIER ADJ
SFR403 Y-FM DEVIATION ADJ
Q401 DTA144ES SWITCH
Q402 DTA144ES
Q405 2SC1740S AMP
Q406 2SA933S AMP
FL401 YLPF
SFR404 PB Y LEVEL ADJ
SFR405 DOC LEVEL (PAL) ADJ
SFR406 DOC LEVEL (NTSC) ADJ
IC441 CXL5003P PAL 1H CCD
IC442 CXL5001P NTSC 1H CCD
Q441 2SC1740S BUFFER
Q442 DTC144ES SWITCH
Q443 2SC1740S AMP
Q444 2SA933S AMP
Q445 2SA933S BUFFER
Q404 2SC1740S BUFFER
Q407 2SC1740S
Q446 2SC1740S BUFFER
Q447 DTC144ES SWITCH
Q448 2SC1740S AMP
Q449 2SA933S AMP
Q450 2SA933S BUFFER
IC471 TC4049BP INVERTER
P/MESEC
NT4.43
NT3.58
IC501 LA7333 C PROCESS
Q503 2SC1740S BUFFER
Q504 2SC1740S BUFFER
Q505 DTA144ES SWITCH
Q506 2SC1740S BUFFER
Q507 DTA144ES SWITCH
Q508 DTA144ES SWITCH
Q509 2SC1740S BUFFER
Q510 DTA144ES SWITCH
Q511 2SC1740S BUFFER
Q512 DTC144ES SWITCH
Q513 DTC144ES SWITCH
Q501 2SC1740S BUFFER
FL501 4.21M CF
FL502 5.06M CF
Q531 DTC144ES SWITCH
Q532 2SC1740S AMP
Q533 2SA933S BUFFER
Q534 DTA144ES SWITCH
Q535 2SC1740S BUFFER
FL503 CSL LPF
RECC ADJ
BL501 NTSC 4.43
Q566 DTA144ES SWITCH
Q567 2SC1740S BUFFER
Q563 DTA144ES SWITCH
Q562 DTA144ES SWITCH
Q565 2SC1740S BUFFER
Q564 2SC1740S AMP
Q561 2SC1740S BUFFER
Q560 DTA144ES SWITCH
BL502 PAL
Q551 DTA144ES SWITCH
Q552 2SC1740S BUFFER
FL505 4.43M BPF
Q553 DTA144ES SWITCH
Q554 2SC1740S BUFFER
FL504 3.58M BPF
Q558 DTA144ES SWITCH
Q559 2SC1740S BUFFER
BL503 NTSC 3.58
Q557 2SC1740S BUFFER
Q555 2SC1740S AMP
VOLTAGE
( ) :REC/EE MODE
< >:NTSC MODE
《 》:NTSC 4.43 MODE
« »:NTSC 3.58 MODE
[ ] :MESECAM MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE
VIDEO SIGNAL
:PB VIDEO SIGNAL
:PB Y SIGNAL
:PB CHROMA SIGNAL
:REC VIDEO SIGNAL
:REC Y SIGNAL
:REC CHROMA SIGNAL
WAVE FROM NO



Q510
DTA144ES
SWITCH
Q511
2SC1740S
BUFFER
FL502
5.06M
CF
R520 2700
R521 2700
D504 1SS133
C525 0.01
Q508
DTA144ES
SWITCH
Q509
2SC1740S
BUFFER
FL501
4.21M
CF
R516 6800
R517 6800
D503 1SS133
C524 0.01
R518 4700
C526 0.01
55

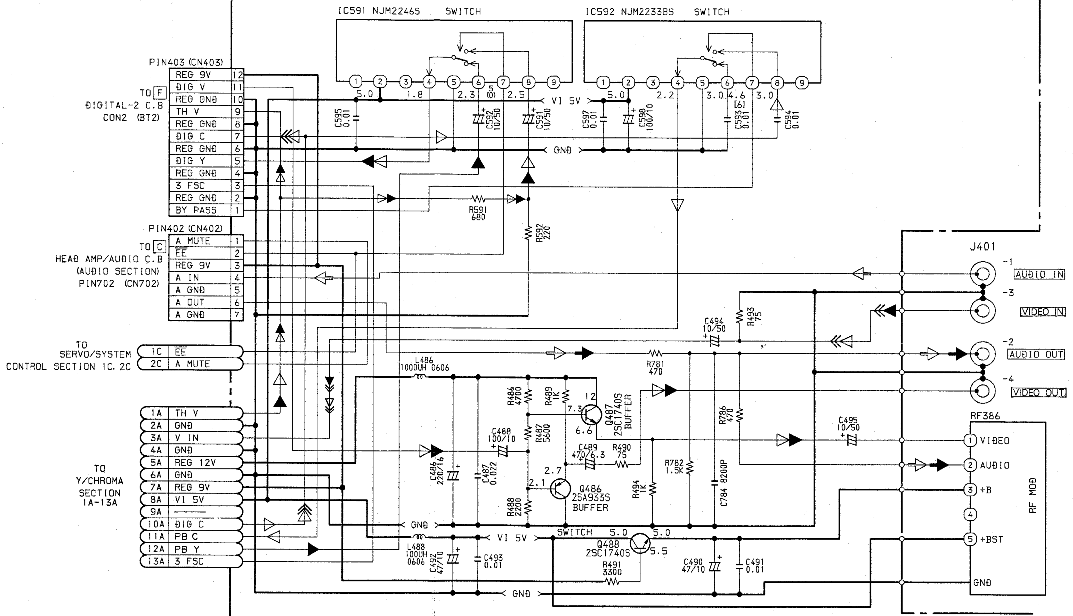
VOLTAGE
( ) :REC/EE MODE
< > :NTSC MODE
« » :NTSC 4.43 MODE
‹ › :NTSC 3.58 MODE
[ ] :MESECAM MODE
WITHOUT PARENTHESES
:PB OR REC/EE MODE

VIDEO SIGNAL
◀◁ :PB VIDEO SIGNAL
◀ :PB Y SIGNAL
◁ :PB CHROMA SIGNAL
◁◁◀ :REC VIDEO SIGNAL
◀◀ :REC Y SIGNAL
◁◁ :REC CHROMA SIGNAL
◀○ WAVE FROM NO



SWITCH
DTA144ES
Q553
2SC1740S
Q554
BUFFER
FL504
3.58M
BPF
R554 1K
C553 0.01
C554 0.01
R556 2200

A MAIN (VIDEO SECTION) C.B



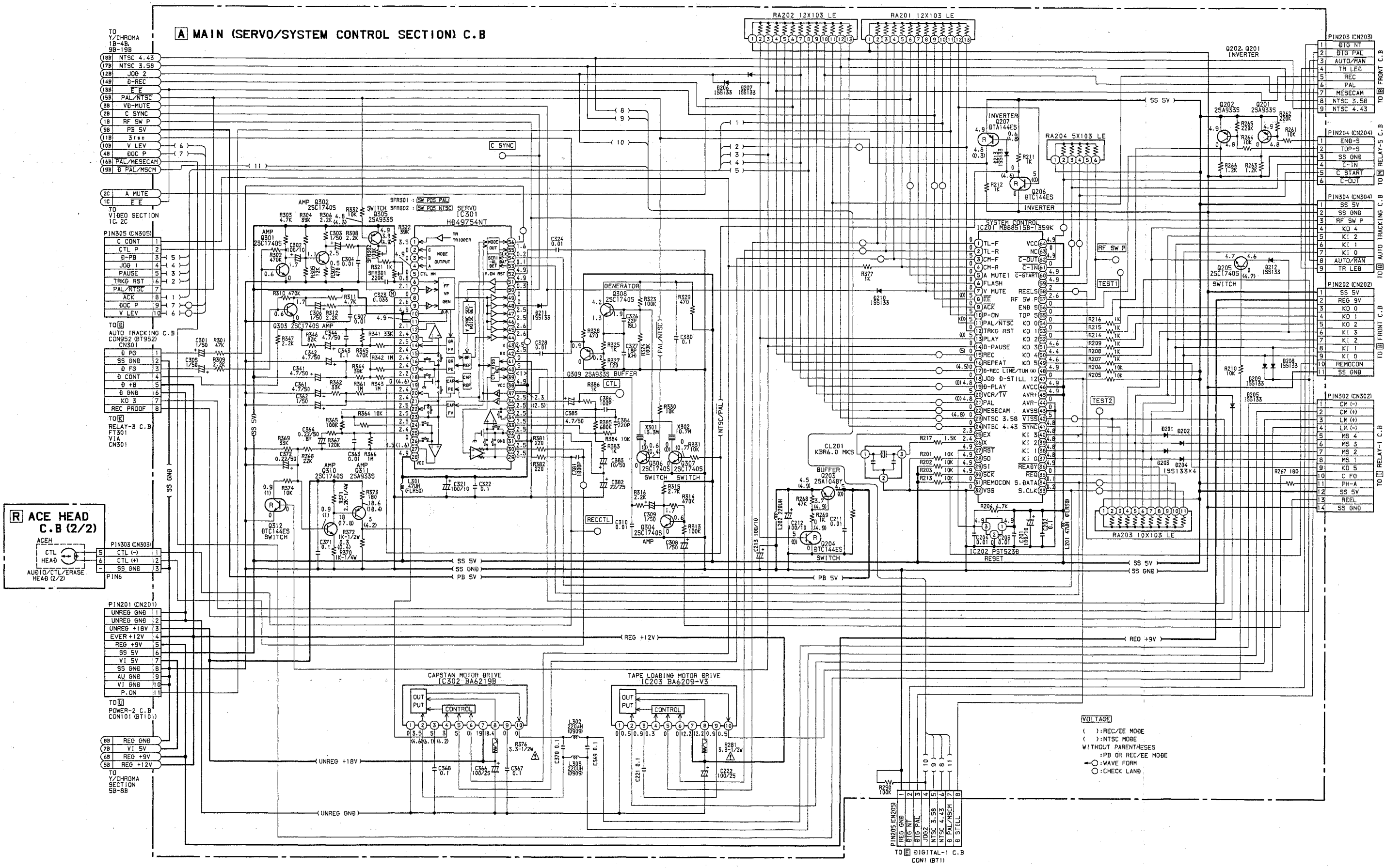
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
PIN403 (CN403)
TO F
DIGITAL-2 C.B
CON2 (BT2)
REG 9V 12
DIG V 11
REG GND 10
TH V 9
REG GND 8
DIG C 7
REG GND 6
DIG Y 5
REG GND 4
3 FSC 3
REG GND 2
BY PASS 1
PIN402 (CN402)
TO C
HEAD AMP/AUDIO C.B
(AUDIO SECTION)
PIN702 (CN702)
A MUTE 1
EE 2
REG 9V 3
A IN 4
A GND 5
A OUT 6
A GND 7
TO
SERVO/SYSTEM
CONTROL SECTION 1C, 2C
1C EE
2C A MUTE
TO
Y/CHROMA
SECTION
1A-13A
1A TH V
2A GND
3A V IN
4A GND
5A REG 12V
6A GND
7A REG 9V
8A VI 5V
9A
10A DIG C
11A PB C
12A PB Y
13A 3 FSC
VI 5V
GND
C595 0.01
C592 10/50
C591 10/50
C597 0.01
C598 100/10
C593 0.01
C594 0.01
R591 680
R592 220
J401
-1 AUDIO IN
-3 VIDEO IN
-2 AUDIO OUT
-4 VIDEO OUT
C494 10/50
R493 75
L486 1000UH 0606
R781 470
R486 4700
R489 1K
Q487 2SC1740S BUFFER
R487 5600
C488 100/10
C489 470/6.3
R490 75
C486 220/16
C487 0.022
Q486 2SA933S BUFFER
R488 2200
R786 470
R782 1.5K
C784 8200P
R494 1K
C495 10/50
RF386
1 VIDEO
2 AUDIO
3 +B
4
5 +BST
GND
RF MOD
SWITCH
Q488 2SC1740S
R491 3300
L488 100UH 0606
C492 47/10
C493 0.01
C490 47/10
C491 0.01

VIDEO SIGNAL
◀ :PB Y SIGNAL
◁ :PB C SIGNAL
◀◀ :REC/EE Y SIGNAL
◁◁ :REC/EE C SIGNAL

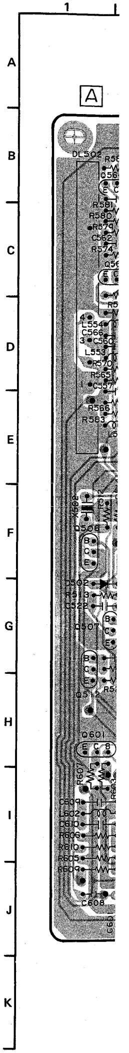
AUDIO SIGNAL
⬅ :PB AUDIO SIGNAL
⇦ :REC/EE AUDIO SIGNAL

VOLTAGE
( ) :REC/EE MODE
( ) :MESECAM MODE
WITHOUT PARENTHESES
:PB OR REC/EE MODE

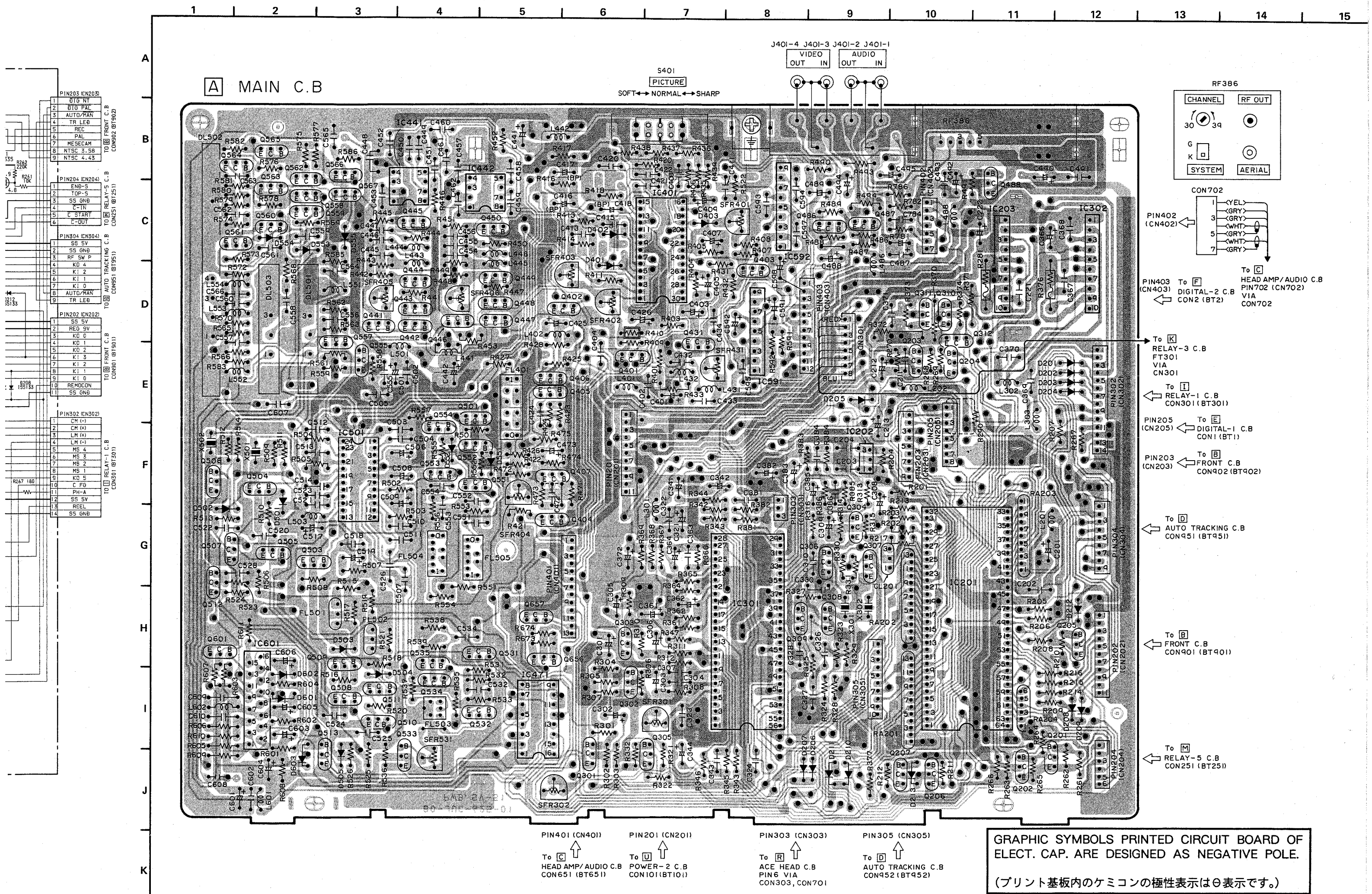
SCHEMATIC DIAGRAM – 2 (SERVO/SYSTEM CONTROL SECTION)


A MAIN (SERVO/SYSTEM CONTROL SECTION) C.B
TO Y/CHROMA 1B-4B, 9B-19B
NTSC 4.43
NTSC 3.58
JOG 2
Ð-REC
E E
PAL/NTSC
VB-MUTE
C SYNC
RF SW P
PB 5V
3fsc
V LEV
DOC P
PAL/MESECAM
Ð PAL/MSCM
A MUTE
TO VIDEO SECTION 1C, 2C
PIN305 (CN305)
TO D AUTO TRACKING C.B CON952 (BT952) CN301
TO K RELAY-3 C.B FT301 VIA CN301
R ACE HEAD C.B (2/2)
ACEH
CTL HEAD
AUDIO/CTL/ERASE HEAD (2/2)
PIN303 (CN303)
PIN201 (CN201)
UNREG GND
UNREG +18V
EVER +12V
REG +9V
SS 5V
VI 5V
SS GND
AU GND
VI GND
P.ON
TO U POWER-2 C.B CON101 (BT101)
REG GND
REG +9V
REG +12V
TO Y/CHROMA SECTION 5B-8B
SERVO IC301 HD49754NT
SYSTEM CONTROL IC201 MB88515B-1359K
CAPSTAN MOTOR DRIVE IC302 BA6219B
TAPE LOADING MOTOR DRIVE IC203 BA6209-V3
RA202 12X103 LE
RA201 12X103 LE
RA204 5X103 LE
RA203 10X103 LE
Q202, Q201 INVERTER
INVERTER Q207 DTA144ES
GENERATOR Q308 2SC1740S
Q309 2SA933S BUFFER
BUFFER Q203 2SA1048Y
Q204 DTC144ES SWITCH
CL201 KBR6.0 MKS
IC202 PST523D RESET
C SYNC
CTL
RECCTL
RF SW P
TEST1
TEST2
REG +12V
REG +9V
UNREG +18V
UNREG GND
PB 5V
PIN203 (CN203)
TO B FRONT C.B CON902 (BT902)
PIN204 (CN204)
TO C RELAY-5 C.B CON251 (BT251)
PIN304 (CN304)
TO D AUTO TRACKING C.B CON951 (BT951)
PIN202 (CN202)
TO B FRONT C.B CON901 (BT901)
PIN302 (CN302)
TO L RELAY-1 C.B CON301 (BT301)
PIN205 (CN205)
TO E DIGITAL-1 C.B CON1 (BT1)
VOLTAGE
( ):REC/EE MODE
( ):NTSC MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE
:WAVE FORM
:CHECK LAND

WIRING – 1 (V


1
A
B
C
D
E
F
G
H
I
J
K
A
DL502
Q601
C608

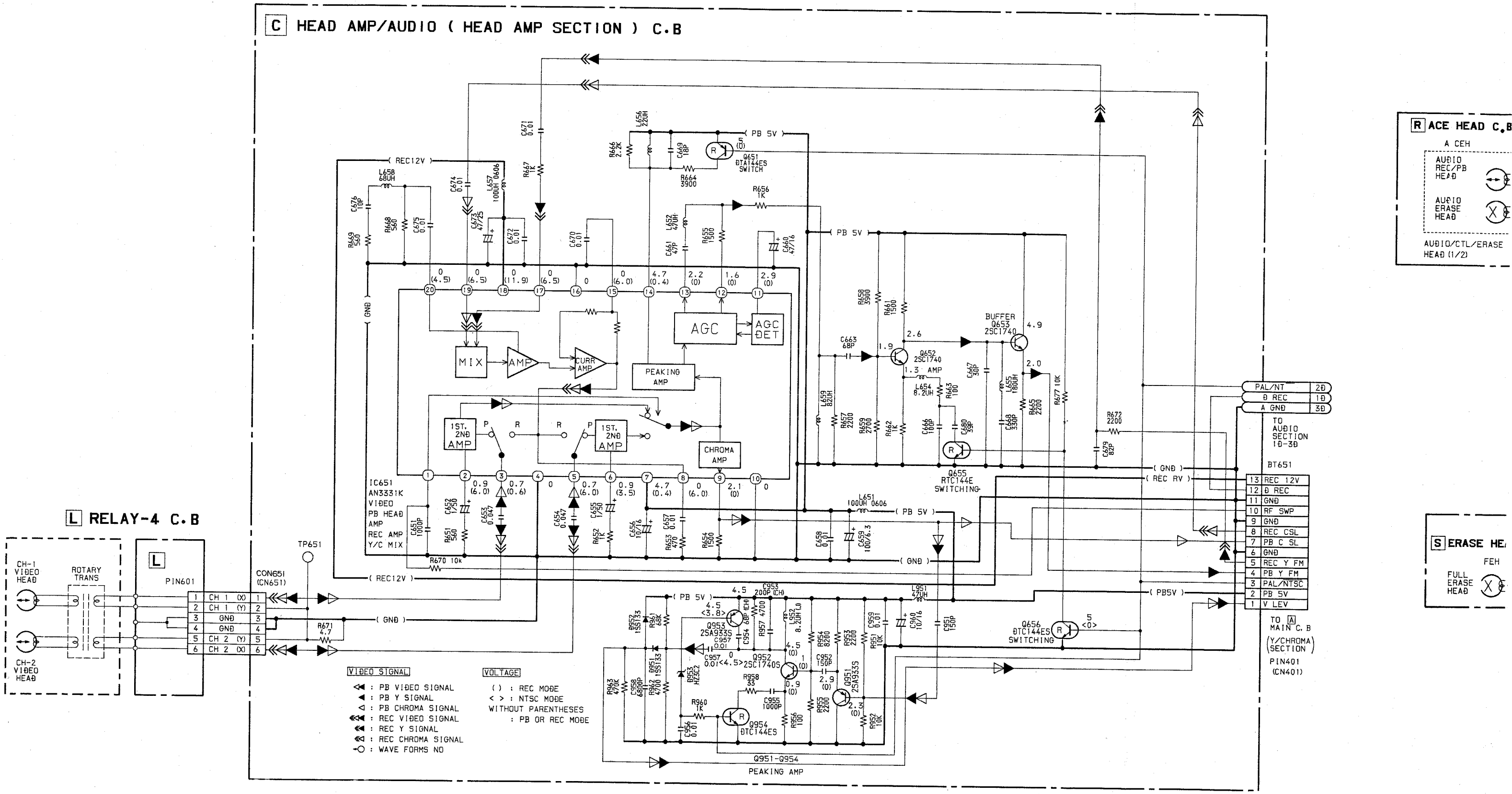
WIRING – 1 (VIDEO/SERVO/SERVO/SYSTEM CONTROL SECTION)

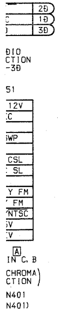

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J K
A MAIN C.B
S401
PICTURE
SOFT ←→ NORMAL ←→ SHARP
J401-4 J401-3 J401-2 J401-1
VIDEO OUT IN
AUDIO OUT IN
RF386
CHANNEL
RF OUT
30 39
G K
SYSTEM
AERIAL
CON702
1 YEL
GRY
3 GRY
WHT
5 GRY
WHT
7 GRY
PIN402 (CN402)
To C HEAD AMP/AUDIO C.B PIN702 (CN702) VIA CON702
PIN403 (CN403) To F DIGITAL-2 C.B CON2 (BT2)
To K RELAY-3 C.B FT301 VIA CN301
To I RELAY-1 C.B CON301 (BT301)
PIN205 (CN205) To E DIGITAL-1 C.B CON1 (BT1)
PIN203 (CN203) To B FRONT C.B CON902 (BT902)
To D AUTO TRACKING C.B CON951 (BT951)
To B FRONT C.B CON901 (BT901)
To M RELAY-5 C.B CON251 (BT251)
PIN401 (CN401) To C HEAD AMP/AUDIO C.B CON651 (BT651)
PIN201 (CN201) To U POWER-2 C.B CON101 (BT101)
PIN303 (CN303) To R ACE HEAD C.B PIN6 VIA CON303, CON701
PIN305 (CN305) To D AUTO TRACKING C.B CON952 (BT952)
PIN203 (CN203)
1 DIG NT
2 DIG PAL
3 AUTO/MAN
4 TR LED
5 REC
6 PAL
7 MESECAM
8 NTSC 3.58
9 NTSC 4.43
TO B FRONT C.B CON902 (BT902)
PIN204 (CN204)
1 END-S
2 TOP-S
3 SS GND
4 C-IN
5 C START
6 C-OUT
TO M RELAY-5 C.B CON251 (BT251)
PIN304 (CN304)
1 SS 5V
2 SS GND
3 RF SW P
4 KO 4
5 KI 2
6 KI 1
7 KI 0
8 AUTO/MAN
9 TR LED
TO D AUTO TRACKING C.B CON951 (BT951)
PIN202 (CN202)
1 SS 5V
2 REG 9V
3 KO 0
4 KO 1
5 KO 2
6 KI 3
7 KI 2
8 KI 1
9 KI 0
10 REMOCON
11 SS GND
TO B FRONT C.B CON901 (BT901)
PIN302 (CN302)
1 CM (-)
2 CM (+)
3 LM (+)
4 LM (-)
5 MS 4
6 MS 3
7 MS 2
8 MS 1
9 KO 5
10 C FG
11 PH-A
12 SS 5V
13 REEL
14 SS GND
TO I RELAY-1 C.B CON301 (BT301)

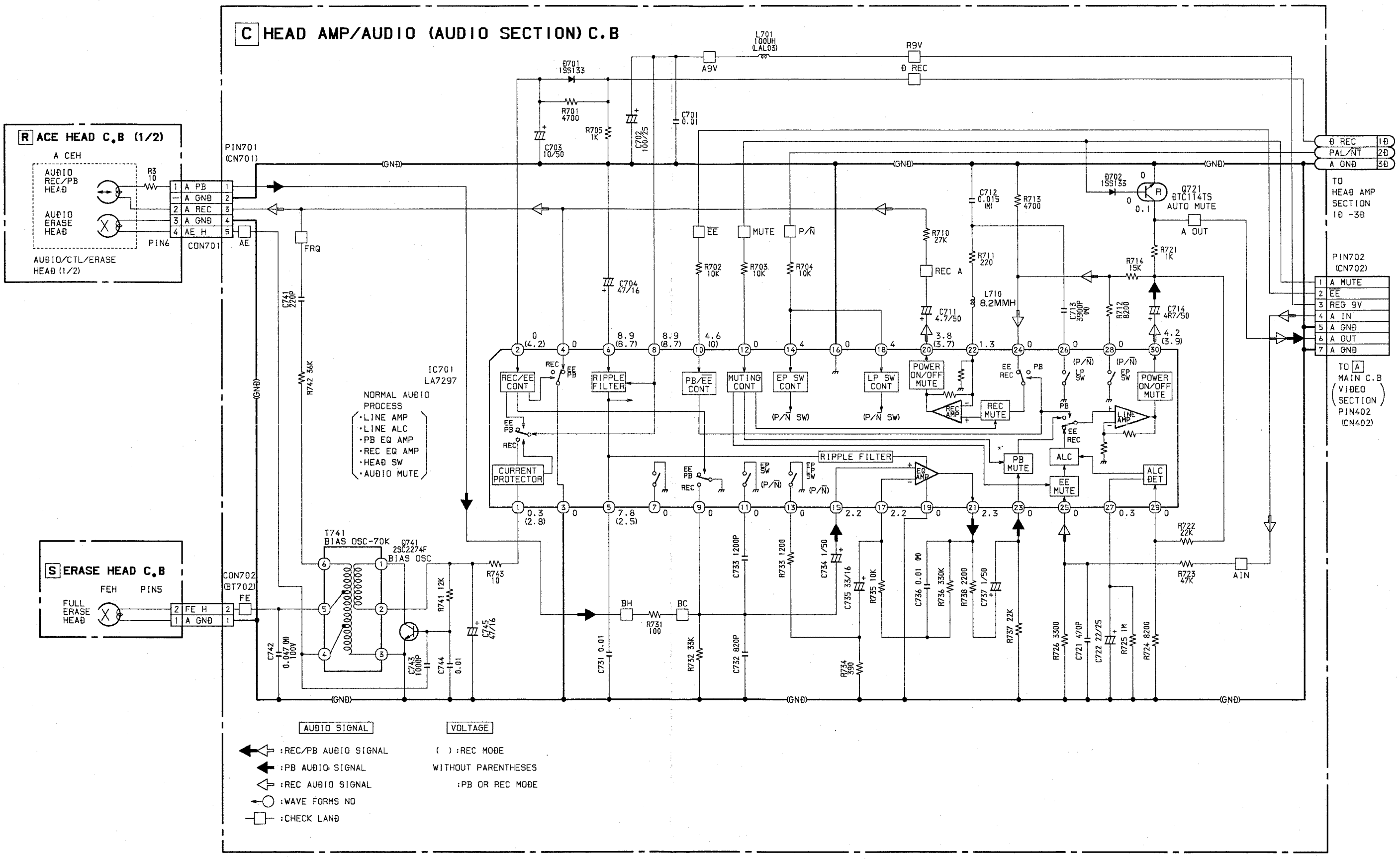
GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

（プリント基板内のケミコンの極性表示は⊖表示です。）

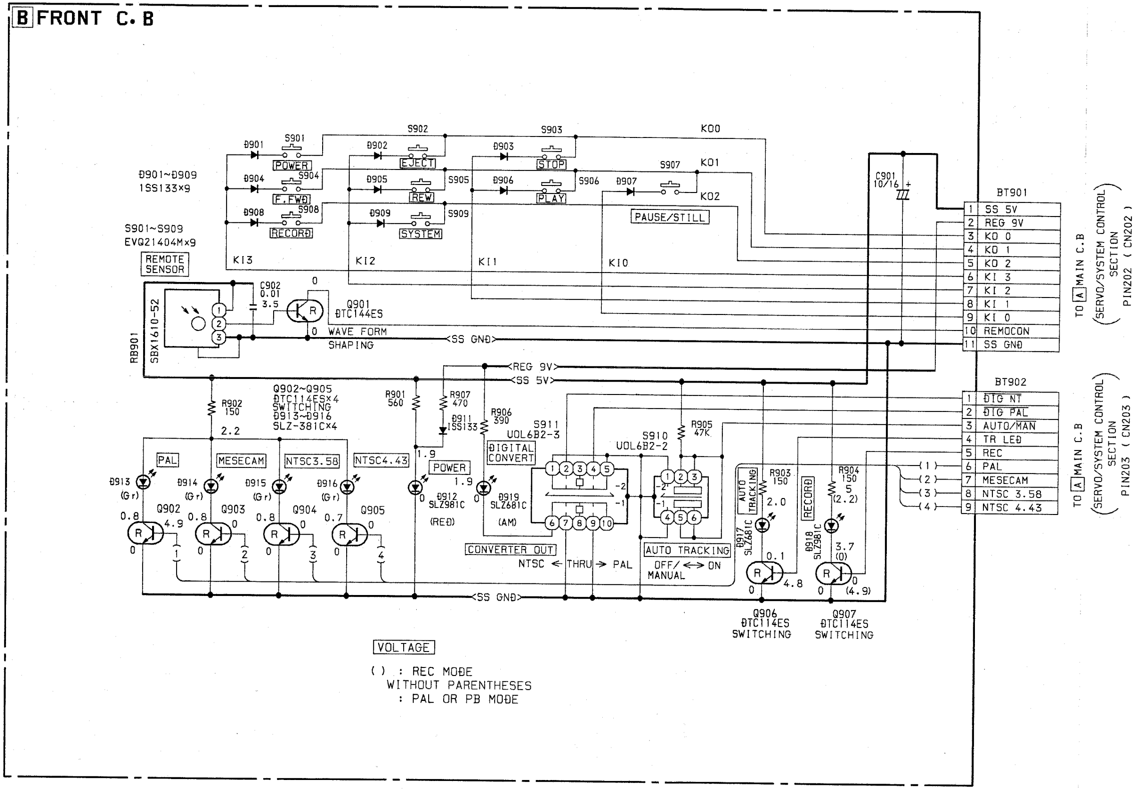
SCHEMATIC DIAGRAM – 3 (HEAD AMP./AUDIO SECTION)


C HEAD AMP/AUDIO (HEAD AMP SECTION) C.B
L RELAY-4 C.B
CH-1 VIDEO HEAD
ROTARY TRANS
CH-2 VIDEO HEAD
PIN601
CON651 (CN651)
TP651
CH 1 (X)
CH 1 (Y)
GND
GND
CH 2 (Y)
CH 2 (X)
R671 4.7
(REC12V)
(GND)
(PB 5V)
IC651 AN3331K VIDEO PB HEAD AMP REC AMP Y/C MIX
MIX
AMP
CURR AMP
AGC
AGC DET
PEAKING AMP
1ST. 2ND AMP
CHROMA AMP
L658 68UH
L657 100UH 0606
L656 22UH
L652 47UH
L651 100UH 0606
Q651 DTA144ES SWITCH
R664 3900
R656 1K
R666 2.2K
C669 18P
C671 0.01
R667 1K
C676 10P
R669 560
R668 560
C675 0.01
C674 0.01
C673 47/25
C672 0.01
C670 0.01
C661 47P
R655 1500
C660 47/16
C651 1000P
R651 560
C652 1/50
C653 0.047
C654 0.047
C655 1/50
R652 1K
C656 10/16
C657 0.01
R653 470
R654 1500
R670 10k
BUFFER Q653 2SC1740
Q652 2SC1740
AMP
L654 8.2UH
R663 100
C663 68P
L659 82UH
R657 2200
R658 3900
R659 2700
R661 1500
R662 1K
C666 100P
C680 39P
C667 30P
C668 330P
L655 180UH
R665 2200
R677 10K
R672 2200
C679 82P
Q655 RTC144E SWITCHING
C658 0.01
C659 100/6.3
L951 47UH
Q656 DTC144ES SWITCHING
C953 200P (CH)
Q953 2SA933S
C954 68P (CH)
R957 4700
L952 8.2UH
Q952 2SC1740S
C957 0.01
R958 33
C955 1000P
R954 8200
R953 2200
C959 0.01
C960 10/16
C951 150P
R951 10K
C952 150P
Q951 2SA933S
R955 2200
R956 100
R952 10K
R960 1K
Q954 DTC144ES
C956 0.01
R963 470K
C958 6800P
R962 4700
D951 1SS133
D952 1SS133
R961 68K
D953 HZ3C2
Q951-Q954 PEAKING AMP
PAL/NT 2D
θ REC 1D
A GND 3D
TO AUDIO SECTION 1D-3D
BT651
13 REC 12V
12 θ REC
11 GND
10 RF SWP
9 GND
8 REC CSL
7 PB C SL
6 GND
5 REC Y FM
4 PB Y FM
3 PAL/NTSC
2 PB 5V
1 V LEV
TO A MAIN C.B (Y/CHROMA) SECTION
PIN401 (CN401)
(REC RV)
(PB5V)
R ACE HEAD C.B
A CEH
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
AUDIO/CTL/ERASE HEAD (1/2)
S ERASE HE
FEH
FULL ERASE HEAD
VIDEO SIGNAL
: PB VIDEO SIGNAL
: PB Y SIGNAL
: PB CHROMA SIGNAL
: REC VIDEO SIGNAL
: REC Y SIGNAL
: REC CHROMA SIGNAL
: WAVE FORMS NO
VOLTAGE
( ) : REC MODE
< > : NTSC MODE
WITHOUT PARENTHESES : PB OR REC MODE


2Ð
1Ð
3Ð
ÐIO
CTION
-3Ð
51
12V
SWP
CSL
SL
Y FM
FM
NTSC
IN C.B
CHROMA
CTION
N401
N401)


C HEAD AMP/AUDIO (AUDIO SECTION) C.B
R ACE HEAD C.B (1/2)
A CEH
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
R3 10
PIN6
AUDIO/CTL/ERASE HEAD (1/2)
PIN701 (CN701)
CON701
1 A PB
A GND
2 A REC
3 A GND
4 AE H
AE
FRQ
C741 220P
R742 36K
S ERASE HEAD C.B
FEH
PIN5
FULL ERASE HEAD
CON702 (BT702)
2 FE H
1 A GND
FE
T741 BIAS OSC-70K
Q741 2SC2274F BIAS OSC
R743 10
R741 12K
C745 47/16
C742 0.047 (M) 100V
C743 1000P
C744 0.01
D701 1SS133
R701 4700
R705 1K
C703 10/50
C702 100/25
C701 0.01
A9V
L701 100UH (LAL03)
R9V
Ð REC
C704 47/16
EE
MUTE
P/N
R702 10K
R703 10K
R704 10K
R710 27K
REC A
C711 4.7/50
C712 0.015 (M)
R713 4700
R711 220
L710 8.2MMH
C713 3900P (M)
R712 8200
D702 1SS133
Q721 DTC114TS AUTO MUTE
A OUT
R714 15K
R721 1K
C714 4R7/50
IC701 LA7297
NORMAL AUDIO PROCESS
·LINE AMP
·LINE ALC
·PB EQ AMP
·REC EQ AMP
·HEAD SW
·AUDIO MUTE
REC/EE CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
POWER ON/OFF MUTE
CURRENT PROTECTOR
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
EE MUTE
ALC DET
(P/N SW)
0 (4.2)
8.9 (8.7)
8.9 (8.7)
4.6 (0)
3.8 (3.7)
1.3
4.2 (3.9)
0.3 (2.8)
7.8 (2.5)
2.2
2.2
2.3
0.3
BH
BC
R731 100
C731 0.01
R732 33K
C733 1200P
C732 820P
R733 1200
C734 1/50
C735 33/16
R734 390
R735 10K
C736 0.01 (M)
R736 330K
R738 2200
C737 1/50
R737 22K
R726 3300
C721 470P
C722 22/25
R725 1M
R724 8200
R722 22K
R723 47K
AIN
(GND)
Ð REC 1Ð
PAL/NT 2Ð
A GND 3Ð
TO HEAD AMP SECTION 1Ð -3Ð
PIN702 (CN702)
1 A MUTE
2 EE
3 REG 9V
4 A IN
5 A GND
6 A OUT
7 A GND
TO A MAIN C.B (VIDEO SECTION) PIN402 (CN402)
AUDIO SIGNAL
:REC/PB AUDIO SIGNAL
:PB AUDIO SIGNAL
:REC AUDIO SIGNAL
:WAVE FORMS NO
:CHECK LAND
VOLTAGE
( ) :REC MODE
WITHOUT PARENTHESES
:PB OR REC MODE

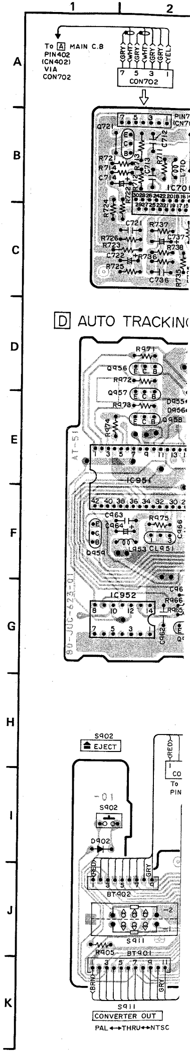
SCHEMATIC DIAGRAM – 4 (FRONT SECTION)


B FRONT C.B
D901~D909
1SS133×9
S901~S909
EVQ21404M×9
REMOTE SENSOR
D901 S901 POWER
D904 S904 F.FWD
D908 S908 RECORD
S902 D902 EJECT
D905 S905 REW
D909 S909 SYSTEM
S903 D903 STOP
D906 S906 PLAY
S907 D907 PAUSE/STILL
KO0 KO1 KO2
KI3 KI2 KI1 KI0
C902 0.01
3.5
0
Q901 DTC144ES
WAVE FORM SHAPING
RB901 SBX1610-52
<SS GND>
<REG 9V>
<SS 5V>
C901 10/16
BT901
1 SS 5V
2 REG 9V
3 KO 0
4 KO 1
5 KO 2
6 KI 3
7 KI 2
8 KI 1
9 KI 0
10 REMOCON
11 SS GND
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION PIN202 (CN202)
R902 150
2.2
Q902~Q905
DTC114ESx4
SWITCHING
D913~D916
SLZ-381C×4
PAL MESECAM NTSC3.58 NTSC4.43
D913 (Gr) D914 (Gr) D915 (Gr) D916 (Gr)
Q902 Q903 Q904 Q905
0.8 4.9 0.8 0.8 0.7
R901 560
R907 470
D911 1SS133
R906 390
POWER
1.9
D912 SLZ981C (RED)
D919 SLZ681C (AM)
S911 UOL6B2-3
DIGITAL CONVERT
S910 UOL6B2-2
R905 47K
CONVERTER OUT
NTSC ← THRU → PAL
AUTO TRACKING
OFF/ ←→ ON MANUAL
R903 150
2.0
R904 150
5 (2.2)
D917 SLZ681C
D918 SLZ981C
0.1 4.8
3.7 (0)
(4.9)
Q906 DTC114ES SWITCHING
Q907 DTC114ES SWITCHING
BT902
1 DIG NT
2 DIG PAL
3 AUTO/MAN
4 TR LED
5 REC
6 PAL
7 MESECAM
8 NTSC 3.58
9 NTSC 4.43
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION PIN203 (CN203)

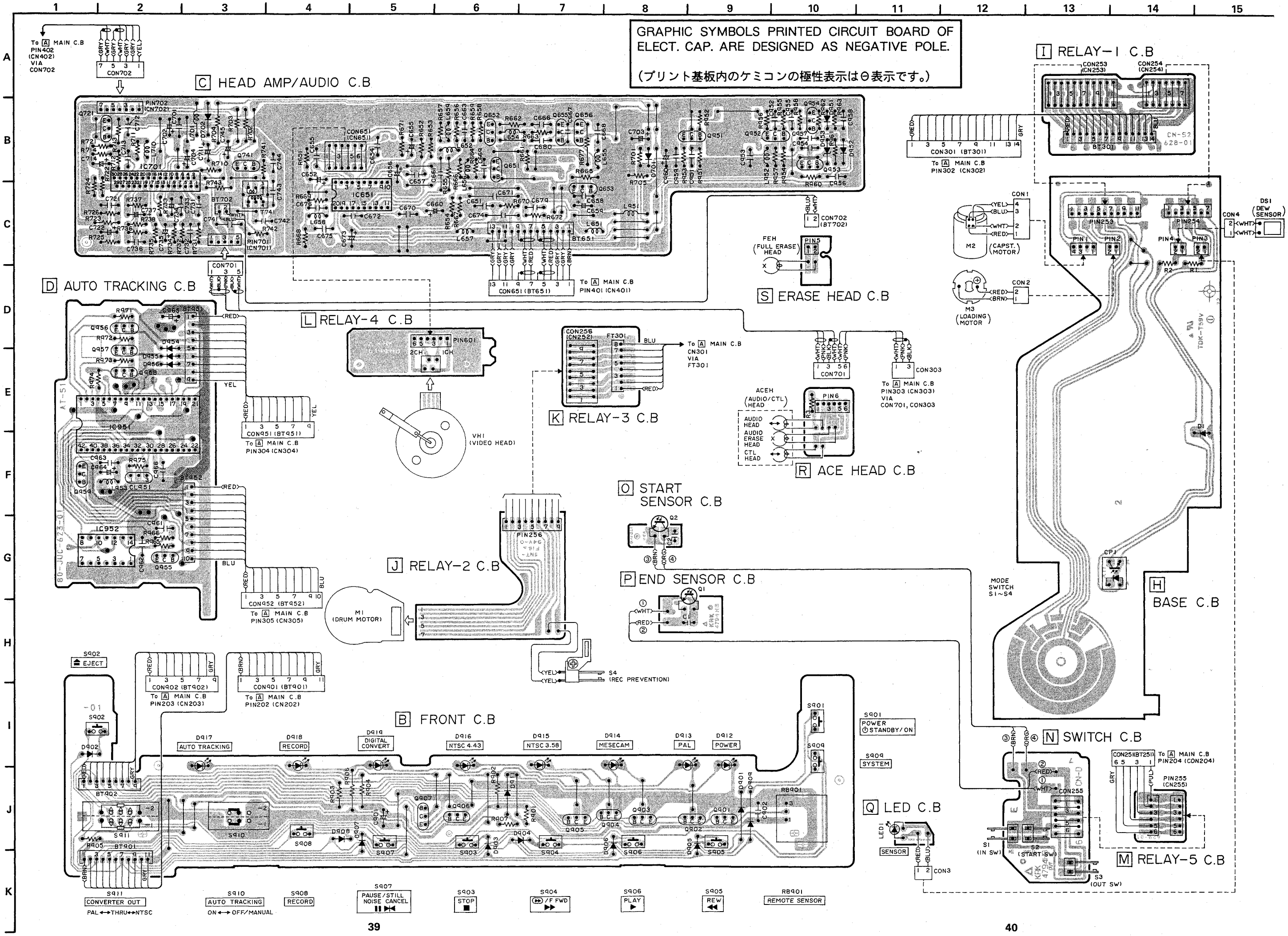
VOLTAGE

( ) : REC MODE
WITHOUT PARENTHESES
: PAL OR PB MODE

WIRING – 2 (HEAD AN


1 2
A B C D E F G H I J K
To A MAIN C.B PIN402 (CN402) VIA CON702
CON702
Q721
IC70
D AUTO TRACKIN
IC951
IC952
S902 EJECT
S902
D902
BT902
S911
R905 BT901
S911
CONVERTER OUT
PAL ↔ THRU ↔ NTSC

WIRING – 2 (HEAD AMP./AUDIO/AUTO TRACKING/FRONT/MECHANISM SECTION)

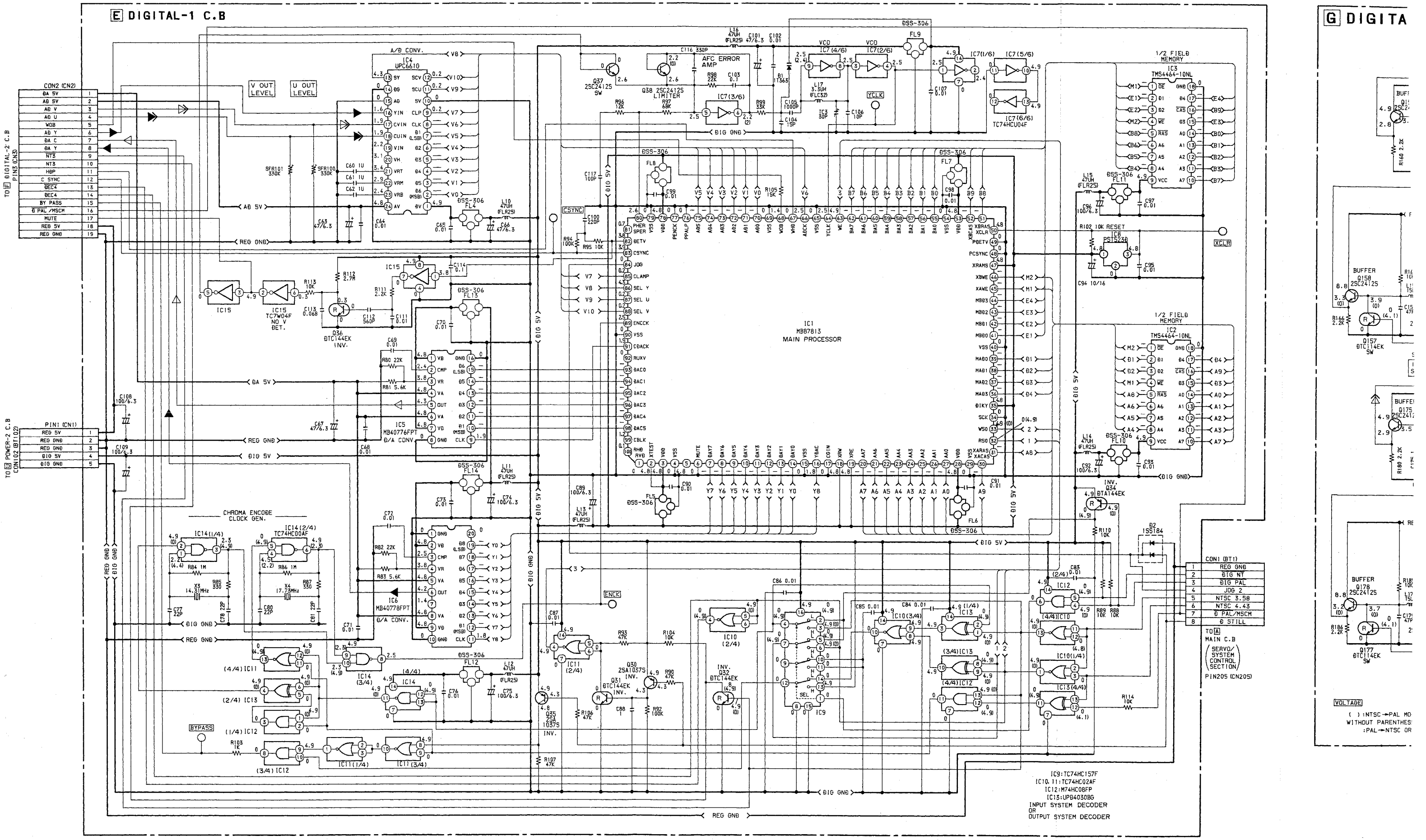


GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

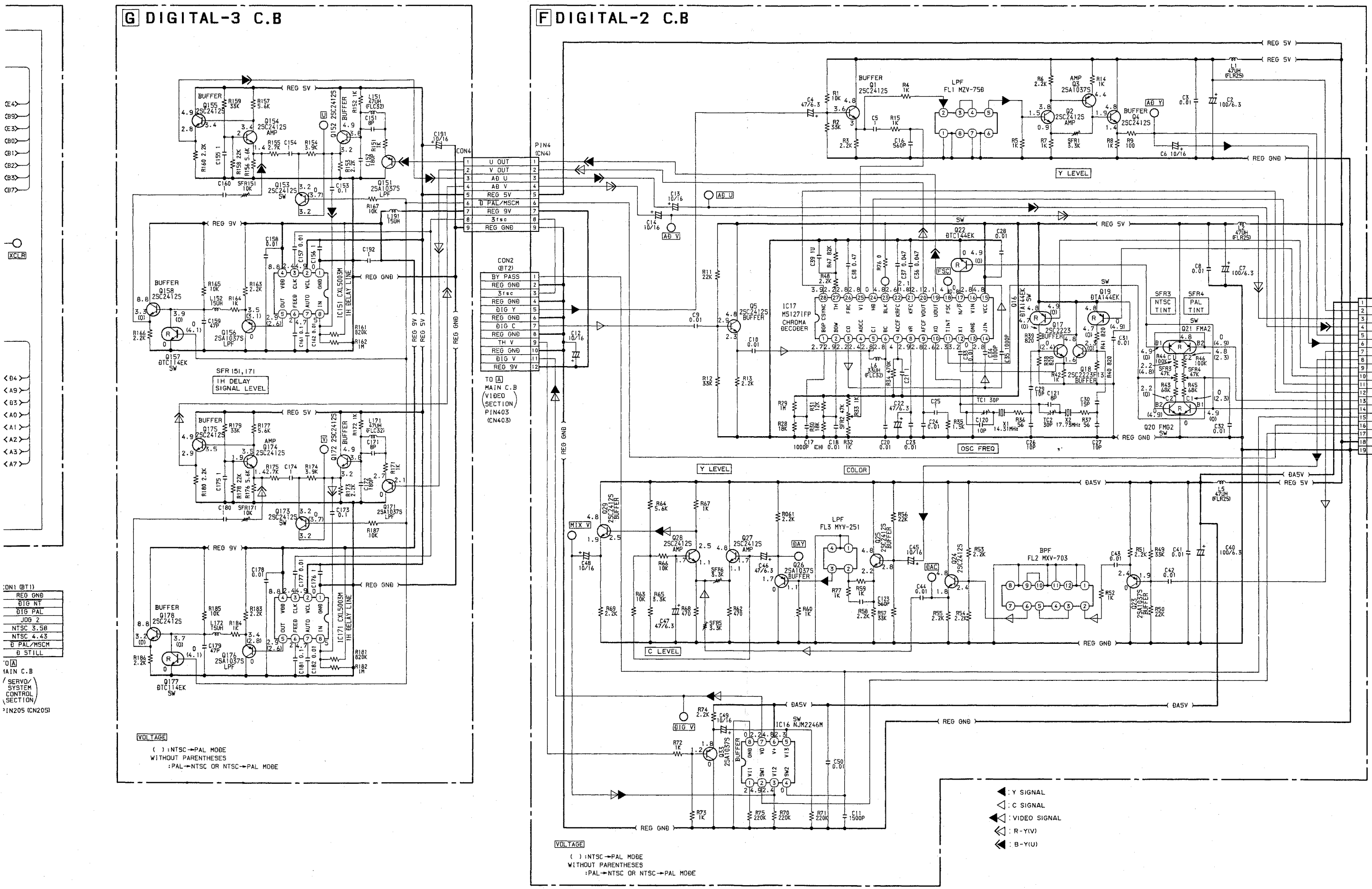
(プリント基板内のケミコンの極性表示は⊖表示です。)

C HEAD AMP/AUDIO C.B
D AUTO TRACKING C.B
L RELAY-4 C.B
K RELAY-3 C.B
J RELAY-2 C.B
I RELAY-1 C.B
S ERASE HEAD C.B
R ACE HEAD C.B
O START SENSOR C.B
P END SENSOR C.B
H BASE C.B
N SWITCH C.B
M RELAY-5 C.B
Q LED C.B
B FRONT C.B
To A MAIN C.B PIN402 (CN402) VIA CON702
CON702
PIN702 (CN702)
PIN701 (CN701)
CON701
CON651 (BT651)
To A MAIN C.B PIN401 (CN401)
CON702 (BT702)
FEH (FULL ERASE) HEAD
PIN5
CON301 (BT301)
To A MAIN C.B PIN302 (CN302)
M2 (CAPST. MOTOR)
M3 (LOADING MOTOR)
CON1
CON2
CON4
DS1 (DEW SENSOR)
CON253 (CN253)
CON254 (CN254)
PIN253
PIN254
PIN1
PIN2
PIN3
PIN4
PIN601
VH1 (VIDEO HEAD)
CON256 (CN252)
FT301
To A MAIN C.B CN301 VIA FT301
CON701
CON303
To A MAIN C.B PIN303 (CN303) VIA CON701, CON303
ACEH (AUDIO/CTL) HEAD
AUDIO HEAD
AUDIO ERASE HEAD
CTL HEAD
PIN6
CON951 (BT951)
To A MAIN C.B PIN304 (CN304)
CON952 (BT952)
To A MAIN C.B PIN305 (CN305)
IC951
IC952
PIN256
M1 (DRUM MOTOR)
S4 (REC PREVENTION)
MODE SWITCH S1~S4
CON902 (BT902)
To A MAIN C.B PIN203 (CN203)
CON901 (BT901)
To A MAIN C.B PIN202 (CN202)
S902 EJECT
D917 AUTO TRACKING
D918 RECORD
D919 DIGITAL CONVERT
D916 NTSC 4.43
D915 NTSC 3.58
D914 MESECAM
D913 PAL
D912 POWER
S901 POWER STANDBY/ON
S909 SYSTEM
RB901
S911 CONVERTER OUT PAL↔THRU↔NTSC
S910 AUTO TRACKING ON↔OFF/MANUAL
S908 RECORD
S907 PAUSE/STILL NOISE CANCEL
S903 STOP
S904 /F FWD
S906 PLAY
S905 REW
RB901 REMOTE SENSOR
LED1 SENSOR
CON3
CON251(BT251)
To A MAIN C.B PIN204 (CON204)
PIN255 (CN255)
CON255
S1 (IN SW)
S2 (START SW)
S3 (OUT SW)

SCHEMATIC DIAGRAM – 5 (DIGITAL SECTION)


E DIGITAL-1 C.B
G DIGITA
TO E DIGITAL-2 C.B PIN3 (CN3)
CON2 (CN2)
DA 5V
AD 5V
AD V
AD U
WOB
AD Y
DA C
DA Y
NT3
NT3
HBP
C SYNC
DEC4
DEC4
BY PASS
D PAL/MSCM
MUTE
REG 5V
REG GND
TO E POWER-2 C.B CON102 (BT102)
PIN1 (CN1)
REG 5V
REG GND
REG GND
DIG 5V
DIG GND
V OUT LEVEL
U OUT LEVEL
A/D CONV.
IC4 UPC661G
IC15 TC7W04F NO V DET.
Q36 DTC144EK INV.
IC5 MB40776FPT D/A CONV.
IC6 MB40778FPT D/A CONV.
CHROMA ENCODE CLOCK GEN.
IC14(1/4)
IC14(2/4) TC74HC00AF
X3 14.31MHz
X4 17.73MHz
BYPASS
Q37 2SC2412S SW
Q38 2SC2412S LIMITER
AFC ERROR AMP
VCO
IC7(4/6)
IC7(2/6)
IC7(3/6)
IC7(1/6)
IC7(5/6)
IC7(6/6) TC74HCU04F
YCLK
CSYNC
DSS-306
IC1 MB87813 MAIN PROCESSOR
1/2 FIELD MEMORY IC3 TMS4464-10NL
1/2 FIELD MEMORY IC2 TMS4464-10NL
IC8 PST523D
R102 10K RESET
XCLR
ENCK
Q35 2SA1037S INV.
Q30 2SA1037S INV.
Q31 DTC144EK INV.
Q32 DTC144EK INV.
Q34 DTA144EK INV.
D2 1SS184
IC9
IC10
IC11
IC12
IC13
CON1 (BT1)
REG GND
DIG NT
DIG PAL
JOG 2
NTSC 3.58
NTSC 4.43
D PAL/MSCM
D STILL
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN205 (CN205)
BUFFER Q158 2SC2412S
Q157 DTC114EK SW
BUFFER Q175 2SC2412
BUFFER Q178 2SC2412S
Q177 DTC114EK SW
VOLTAGE
( ) :NTSC→PAL MO
WITHOUT PARENTHES :PAL→NTSC OR

IC9:TC74HC157F
IC10, 11:TC74HC02AF
IC12:M74HC08FP
IC13:UPD4030BG
INPUT SYSTEM DECODER
OR
OUTPUT SYSTEM DECODER

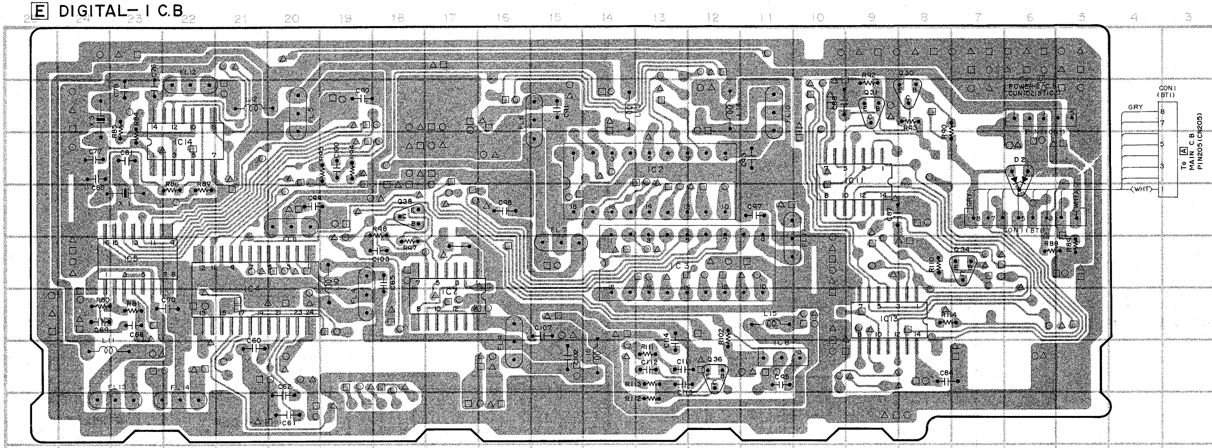

G DIGITAL-3 C.B
F DIGITAL-2 C.B
BUFFER Q155 2SC2412S
Q154 2SC2412S AMP
Q152 2SC2412S BUFFER
Q151 2SA1037S LPF
Q153 2SC2412S SW
L151 47UH
L191 15UH
C191 10/16
CON4
U OUT
V OUT
AD U
AD V
REG 5V
D PAL/MSCM
REG 9V
3fsc
REG GND
PIN4 (CN4)
BUFFER Q158 2SC2412S
Q157 DTC114EK SW
Q156 2SA1037S LPF
IC151 CXL5003M 1H DELAY LINE
SFR 151,171
1H DELAY SIGNAL LEVEL
CON2 (BT2)
BY PASS
REG GND
3fsc
REG GND
DIG Y
REG GND
DIG C
REG GND
TH V
REG GND
DIG V
REG 9V
TO A MAIN C.B (VIDEO SECTION) PIN403 (CN403)
BUFFER Q175 2SC2412S
Q174 2SC2412S AMP
Q172 2SC2412S BUFFER
Q171 2SA1037S LPF
Q173 2SC2412S SW
L171 47UH
BUFFER Q178 2SC2412S
Q177 DTC114EK SW
Q176 2SA1037S LPF
IC171 CXL5003M 1H DELAY LINE
CON1 (BT1)
REG GND
DIG NT
DIG PAL
JOG 2
NTSC 3.58
NTSC 4.43
D PAL/MSCM
D STILL
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN205 (CN205)
XCLR
REG 5V
REG GND
REG 9V
BUFFER Q1 2SC2412S
LPF FL1 MZV-758
AMP Q3 2SA1037S
Q2 2SC2412S AMP
BUFFER Q4 2SC2412S
AD Y
Y LEVEL
AD U
AD V
Q5 2SC2412S BUFFER
IC17 M51271FP CHROMA DECODER
Q22 DTC144EK SW
FSC
Q16 DTA144EK SW
Q17 2SC2223 BUFFER
Q19 DTA144EK SW
Q18 2SC2223 BUFFER
SFR3 NTSC TINT
SFR4 PAL TINT
Q21 FMA2 SW
Q20 FMG2 SW
X1 14.31MHz
X2 17.73MHz
OSC FREQ
PIN3 (CN3)
DA 5V
AD 5V
AD V
AD U
WOB
AD Y
DA C
DA Y
NT 3
NT 3
HD P
C SYNC
DEC 4
DEC 4
BY PASS
D PAL/MSCM
MUTE
REG 5V
REG GND
TO E DIGITAL-1 C.B CON2 (CN2)
Y LEVEL
COLOR
DA5V
MIX V
Q29 2SC2412S BUFFER
Q28 2SC2412S AMP
Q27 2SC2412S AMP
LPF FL3 MYV-251
DAY
Q26 2SA1037S BUFFER
Q25 2SC2412S BUFFER
DAC
Q24 2SC2412S
BPF FL2 MXV-703
Q23 2SA1037S BUFFER
C LEVEL
L5 47UH
DIG V
SW IC16 NJM2246M
Q33 2SA1037S BUFFER
◀ : Y SIGNAL
◁ : C SIGNAL
◀◁ : VIDEO SIGNAL
≪ : R-Y(V)
≪ : B-Y(U)

VOLTAGE
( ) :NTSC→PAL MODE
WITHOUT PARENTHESES
:PAL→NTSC OR NTSC→PAL MODE

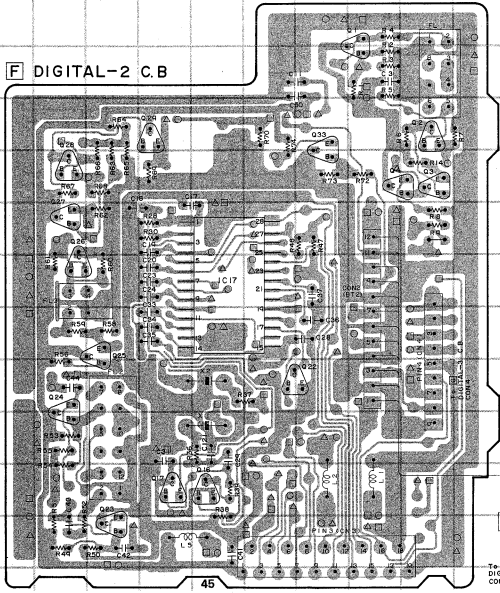
VOLTAGE
( ) :NTSC→PAL MODE
WITHOUT PARENTHESES
:PAL→NTSC OR NTSC→PAL MODE

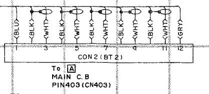
WIRING – 3 (DIGITAL SECTION)

E DIGITAL– 1 C.B


IC1
IC2
IC3
IC4
IC5
IC7
IC8
IC11
IC13
IC14
CON1 (BT1)
POWER 2 C.B CON102(BT102)
GRY
WHT
CON1 (BT1)
To A MAIN C.B PIN205(CN205)

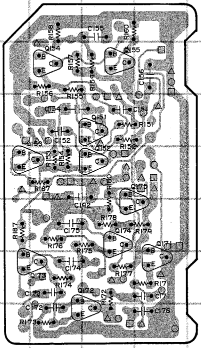
F DIGITAL–2 C.B


IC17
CON2 (BT2)
PIN4(CN4)
To G DIGITAL–3 C.B CON4
PIN3(CN3)

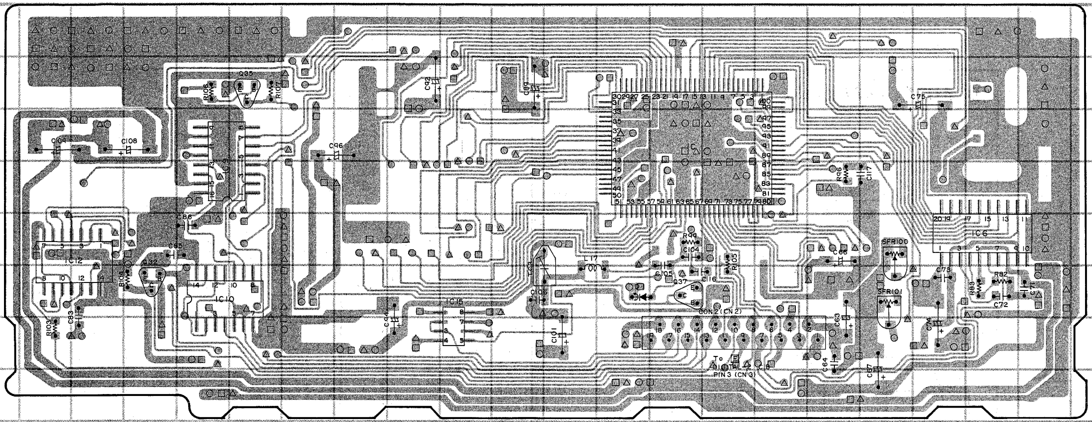

BLU
BLK
WHT
BLK
WHT
BLK
WHT
BLK
WHT
BLK
WHT
GRY
1
3
5
7
9
11
12
CON2 (BT2)
To A MAIN C.B PIN403(CN403)

To E DIGITAL–1 C.B CON 2(CN2)

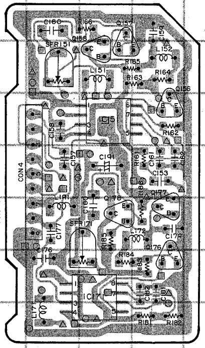
G DIGITAL–3 C.B



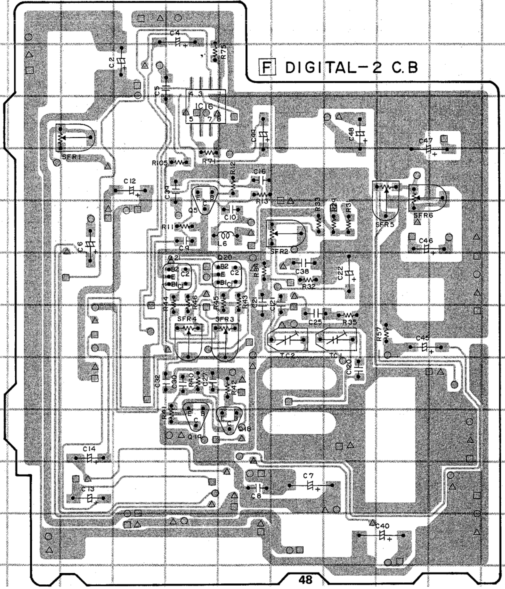
E DIGITAL-1 C.B


MAIN C.B
P1N205(CN205)
IC12
IC10
IC15
IC6
Q35
Q32
Q37
CON2 (CN2)
To
PIN 3 (CN 3)
SFR100
SFR101
C108
C106
C96
C86
C85
C83
C44
C92
C89
C101
C106
C104
C105
C116
C117
C75
C79
C72
C71
C74
C63
C64
C67
C66
R106
R103
R105
R99
R82
R83
L1

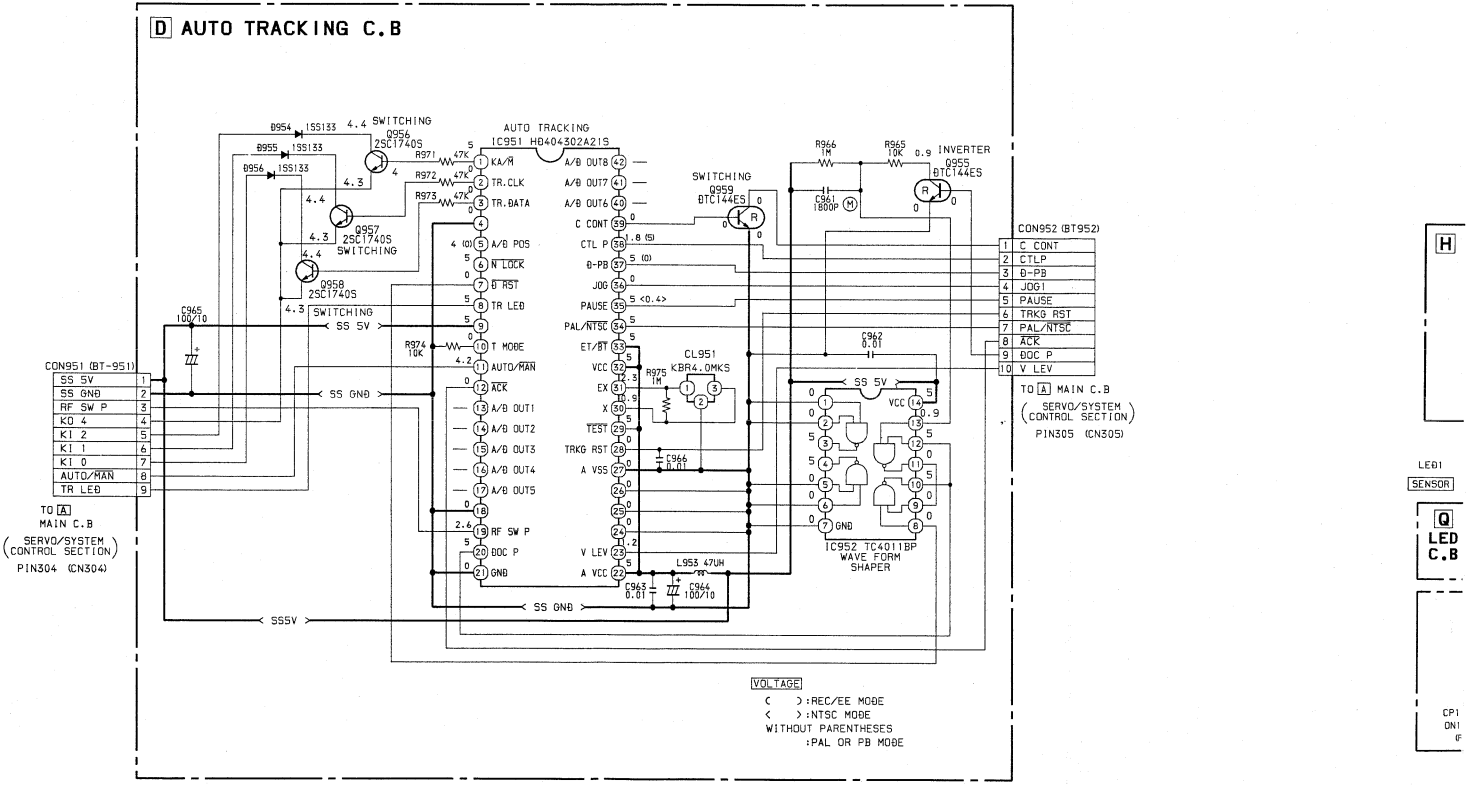
G DIGITAL-3 C.B


To F
DIGITAL-2 C.B
PIN 4 (CN 4)
CON4
IC15
IC17
SFR15
SFR17
Q155
Q157
Q156
Q178
Q176
L151
L152
L171
L172
L17
C160
C157
C158
C191
C161
C153
C177
C171
C176
C173
C182
R166
R165
R163
R164
R162
R161
R185
R184
R183
R181
R182

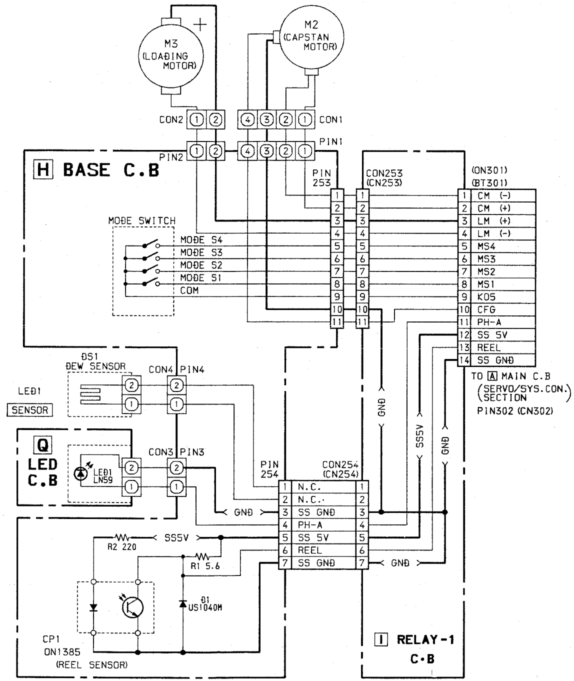
F DIGITAL-2 C.B

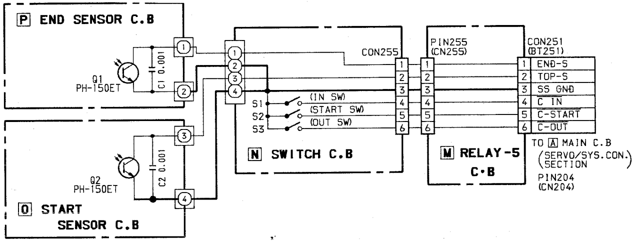

IC16
SFR1
SFR2
SFR3
SFR4
SFR5
SFR6
Q5
Q18
Q19
Q20
Q21
L6
TC1
TC2
C2
C4
C5
C6
C7
C8
C9
C10
C12
C13
C14
C16
C21
C22
C25
C27
C32
C38
C40
C45
C46
C47
C48
C120
R10
R11
R12
R13
R31
R32
R33
R34
R35
R40
R41
R42
R43
R44
R45
R46
R57
R71
R75
R105

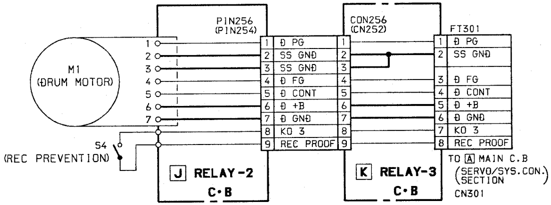
SCHEMATIC DIAGRAM – 6 (AUTO TRACKING/MECHANISM SECTION)


D AUTO TRACKING C.B
AUTO TRACKING
IC951 HD404302A21S
KA/M
TR.CLK
TR.DATA
A/D POS
N LOCK
D RST
TR LED
T MODE
AUTO/MAN
ACK
A/D OUT1
A/D OUT2
A/D OUT3
A/D OUT4
A/D OUT5
RF SW P
DOC P
GND
A/D OUT8
A/D OUT7
A/D OUT6
C CONT
CTL P
D-PB
JOG
PAUSE
PAL/NTSC
ET/BT
VCC
EX
X
TEST
TRKG RST
A VSS
V LEV
A VCC
D954 1SS133
D955 1SS133
D956 1SS133
SWITCHING
Q956 2SC1740S
Q957 2SC1740S SWITCHING
Q958 2SC1740S SWITCHING
R971 47K
R972 47K
R973 47K
R974 10K
C965 100/10
SS 5V
SS GND
SS5V
CON951 (BT-951)
SS 5V
SS GND
RF SW P
KO 4
KI 2
KI 1
KI 0
AUTO/MAN
TR LED
TO A MAIN C.B
(SERVO/SYSTEM CONTROL SECTION)
PIN304 (CN304)
SWITCHING
Q959 DTC144ES
R966 1M
R965 10K
INVERTER
Q955 DTC144ES
C961 1800P M
CL951 KBR4.0MKS
R975 1M
C966 0.01
C962 0.01
L953 47UH
C963 0.01
C964 100/10
VCC
IC952 TC4011BP
WAVE FORM SHAPER
CON952 (BT952)
C CONT
CTLP
D-PB
JOG1
PAUSE
TRKG RST
PAL/NTSC
ACK
DOC P
V LEV
TO A MAIN C.B
(SERVO/SYSTEM CONTROL SECTION)
PIN305 (CN305)
H
LED1
SENSOR
Q LED C.B
CP1
ON1

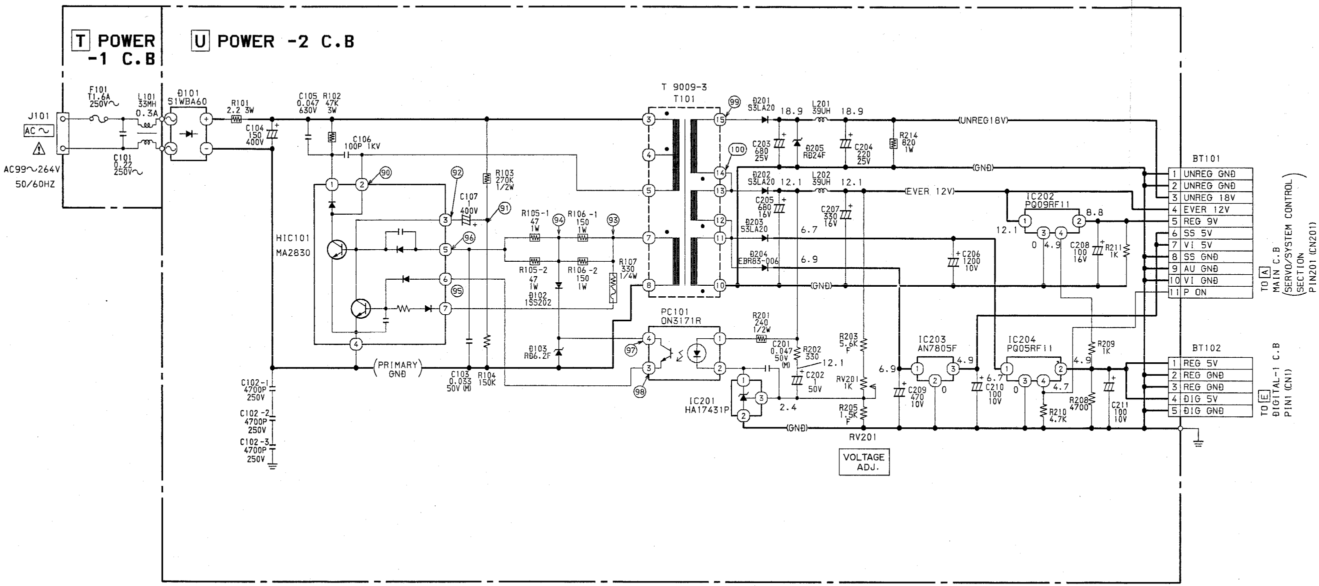
VOLTAGE
( ) :REC/EE MODE
< > :NTSC MODE
WITHOUT PARENTHESES
:PAL OR PB MODE


M3
(LOADING MOTOR)
M2
(CAPSTAN MOTOR)
CON2
CON1
PIN1
PIN2
H BASE C.B
PIN 253
CON253 (CN253)
(ON301) (BT301)
1 CM (-)
2 CM (+)
3 LM (+)
4 LM (-)
5 MS4
6 MS3
7 MS2
8 MS1
9 KO5
10 CFG
11 PH-A
12 SS 5V
13 REEL
14 SS GND
MODE SWITCH
MODE S4
MODE S3
MODE S2
MODE S1
COM
TO A MAIN C.B (SERVO/SYS.CON. SECTION) PIN302 (CN302)
DS1 DEW SENSOR
CON4
PIN4
LED1
SENSOR
Q LED C.B
LED1 LN59
CON3
PIN3
PIN 254
CON254 (CN254)
1 N.C.
2 N.C.
3 SS GND
4 PH-A
5 SS 5V
6 REEL
7 SS GND
GND
SS5V
R2 220
R1 5.6
D1 US1040M
CP1 ON1385 (REEL SENSOR)
I RELAY-1 C·B


P END SENSOR C.B
Q1 PH-150ET
C1 0.001
O START SENSOR C.B
Q2 PH-150ET
C2 0.001
CON255
S1 (IN SW)
S2 (START SW)
S3 (OUT SW)
N SWITCH C.B
PIN255 (CN255)
M RELAY-5 C·B
CON251 (BT251)
1 END-S
2 TOP-S
3 SS GND
4 C IN
5 C-START
6 C-OUT
TO A MAIN C.B (SERVO/SYS.CON. SECTION) PIN204 (CN204)


M1 (DRUM MOTOR)
PIN256 (PIN254)
1 D PG
2 SS GND
3 SS GND
4 D FG
5 D CONT
6 D +B
7 D GND
8 KO 3
9 REC PROOF
S4 (REC PREVENTION)
J RELAY-2 C·B
CON256 (CN252)
K RELAY-3 C·B
FT301
1 D PG
2 SS GND
3 D FG
4 D CONT
5 D +B
6 D GND
7 KO 3
8 REC PROOF
TO A MAIN C.B (SERVO/SYS.CON. SECTION) CN301

SCHEMATIC DIAGRAM – 7 (POWER UNIT SECTION)


T POWER -1 C.B
U POWER -2 C.B
J101
AC ~
AC99~264V
50/60HZ
F101 T1.6A 250V~
L101 33MH 0.3A
C101 0.22 250V~
D101 S1WBA60
R101 2.2 3W
C104 150 400V
C105 0.047 630V
R102 47K 3W
C106 100P 1KV
C107 1 400V
R103 270K 1/2W
HIC101 MA2830
C102-1 4700P 250V
C102-2 4700P 250V
C102-3 4700P 250V
(PRIMARY GND)
C103 0.033 50V (M)
R104 150K
R105-1 47 1W
R105-2 47 1W
R106-1 150 1W
R106-2 150 1W
D102 1SS202
D103 RD6.2F
R107 330 1/4W
T 9009-3
T101
PC101 ON3171R
D201 S3LA20
D202 S3LA20
D203 S3LA20
D204 EBR63-006
D205 RD24F
L201 39UH
L202 39UH
C203 680 25V
C204 220 25V
C205 680 16V
C207 330 16V
C206 1200 10V
R214 820 1W
(UNREG18V)
(GND)
(EVER 12V)
IC202 PQ09RF11
C208 100 16V
R211 1K
R201 240 1/2W
C201 0.047 50V (M)
R202 330
C202 1 50V
R203 5.6K F
RV201 1K
R205 1.5K F
IC201 HA17431P
IC203 AN7805F
C209 470 10V
IC204 PQ05RF11
C210 100 10V
R209 1K
R208 4700
R210 4.7K
C211 100 10V
RV201
VOLTAGE ADJ.
18.9
12.1
6.7
6.9
8.8
4.9
2.4
0
4.7
BT101
1 UNREG GND
2 UNREG GND
3 UNREG 18V
4 EVER 12V
5 REG 9V
6 SS 5V
7 VI 5V
8 SS GND
9 AU GND
10 VI GND
11 P ON
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN201 (CN201)
BT102
1 REG 5V
2 REG GND
3 REG GND
4 DIG 5V
5 DIG GND
TO E DIGITAL-1 C.B PIN1 (CN1)
90
91
92
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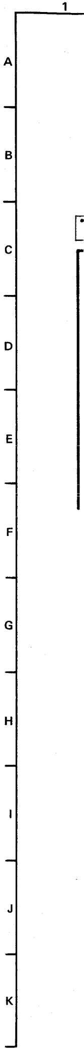
100

WIRING –


1
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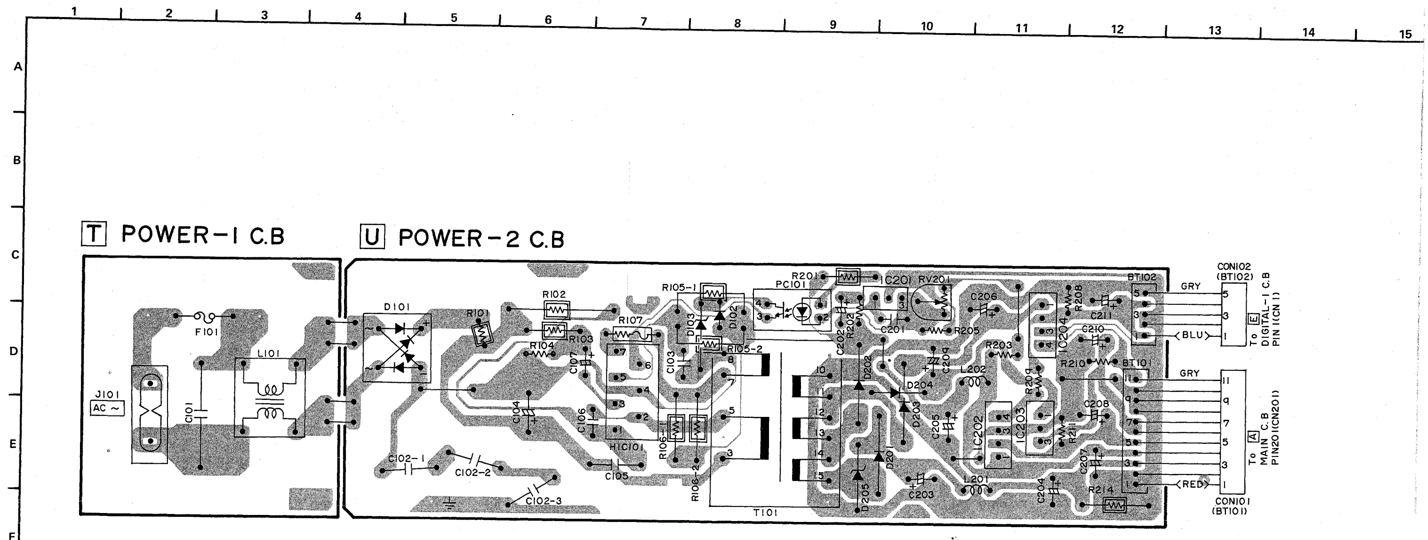
K

WIRING – 4 (POWER UNIT SECTION)



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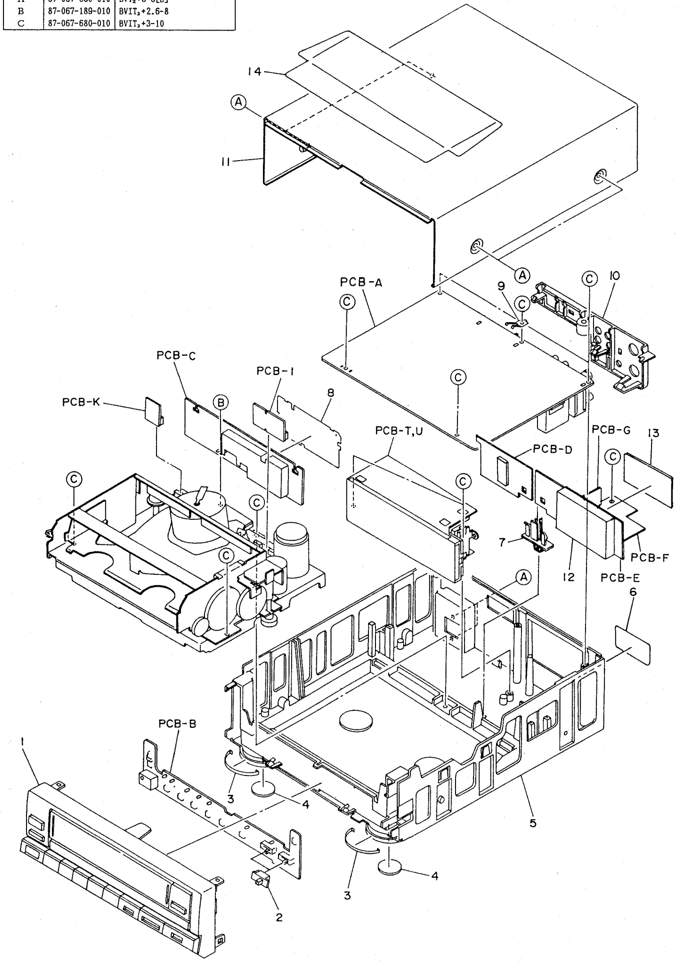
J
K
T POWER-1 C.B
U POWER-2 C.B
J101
AC ~
F101
C101
L101
D101
R101
R102
R104
R103
C107
C104
C106
C102-1
C102-2
C102-3
R107
HIC101
C103
C105
R105-1
R105-2
D103
D102
R106-1
R106-2
T101
PC101
R201
IC201
RV201
C202
R202
C201
R205
C206
C211
R208
IC204
C210
R203
R210
C204
L202
D202
D204
D203
D201
D205
C205
C203
L201
IC202
IC203
R209
R211
C208
C207
C204
R214
BT102
BT101
GRY
BLU
GRY
RED
CON102
(BT102)
To E DIGITAL-1 C.B PIN1 (CN1)
CON101
(BT101)
To A MAIN C.B PIN201 (CN201)

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

（プリント基板内のケミコンの極性表示はΘ表示です。）

EXPLODED VIEW – 1

REF.NO.	PART NO.	DESCRIPTION
A	87-067-660-010	BVT_2+3-8[B]
B	87-067-189-010	$BVIT_3$+2.6-8
C	87-067-680-010	$BVIT_3$+3-10



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PCB-A
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PCB-C
PCB-I
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PCB-K
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PCB-T,U
PCB-D
PCB-G
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12
PCB-E
PCB-F
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PCB-B
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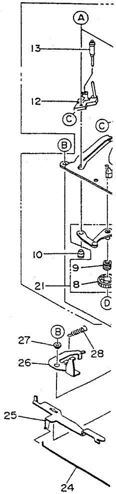
MECHANICAL PARTS LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	1-1	★09-057-095-010	PANEL FRONT ASSY	*	1
	1-2	★80-JUB-008-110	KNOB, SLIDE		2
	1-3	★89-JU7-018-010	PLATE, FOOT		2
	1-4	★89-JU7-031-010	FELT, FOOT 8-8		2
	1-5	---	CABINET, MAIN 2		1
	1-6	★80-JUC-007-010	PLATE, SPEC	*	1
	1-7	---	HOLDER, PCB 2		1
	1-8	---	SHIELD, RP2		1
	1-9	---	PLATE, EARTH 2		1
	1-10	★89-JU8-022-010	PLATE, REAR DK		1
	1-11	★89-JU7-015-210	CABINET, STEEL		1
	1-12	---	SHIELD, DG1		1
	1-13	---	SHIELD, DG2		1
	1-14	---	SHEET, POP A		1

EXPLODED VIEW

REF.NO.	PART NO.	
A	S9-665-000-000	CUP
B	S9-192-000-000	C TA
C	S9-550-000-000	SET
D	S9-884-000-000	PW C



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PART NO. CHANGED TO	REF. NO.
	2-1
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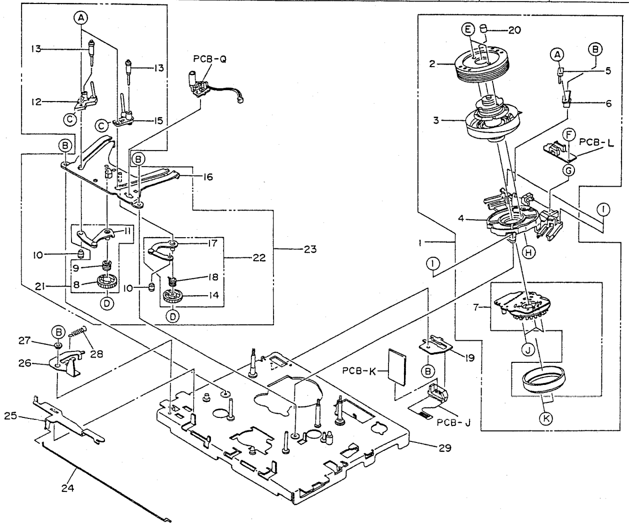
EXPLODED VIEW – 2

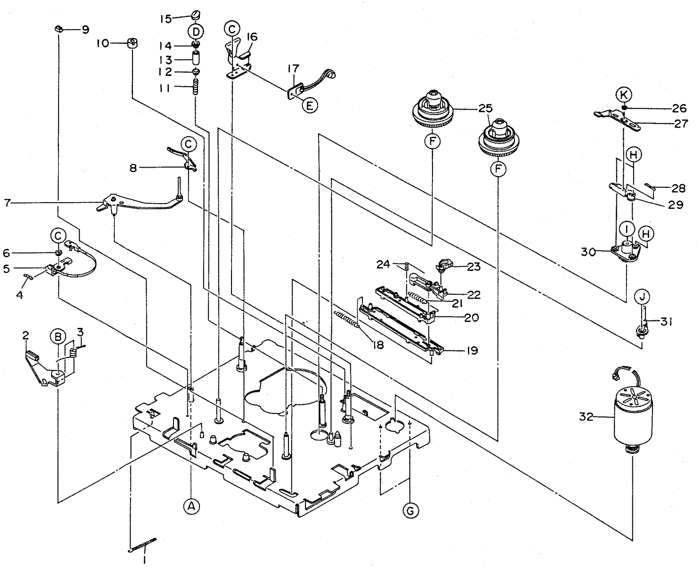
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-665-000-000	CUP SCREW 2.6×3	E	S9-972-000-000	BIND TAMS SCREW 3×8	I	S9-205-000-000	C TAPPING SCREW 3×10
B	S9-192-000-000	C TAPPING SCREW 2.6×5	F	S9-973-000-000	W TAMS SCREW 2.6×6	J	S9-055-000-000	SCREW 2.6×2.0
C	S9-550-000-000	SET SCREW 2.0×3(PLANE)	G	S9-715-000-000	WASHER 2.6	K	S9-999-200-350	TAMS SCREW 2.6×6
D	S9-884-000-000	PW CUT 2.6×6×0.5	H	S9-999-180-180	SCREW(FOR CAMERA) 2×5			



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	2-1	★ S8-059-725-0A0	CYLINDER ASSY		1
	2-2	S8-059-010-190	UPPER DRUM		1
	2-3	★ S8-059-013-040	LOWER DRUM ASSY		1
	2-4	★ S8-059-010-010	CYLINDER MOUNT		1
	2-5	★ S8-059-010-540	DRUM EARTH		1
	2-6	★ S8-059-010-020	DRUM EARTH BRACKET		1
	2-7	S6-004-030-240	MOTOR TM82		1
	2-8	★ S8-059-030-060	T LOADING GEAR L		1
	2-9	★ S8-059-030-080	LOADING GEAR SPRING L		1
	2-10	★ S8-059-030-140	LOADING BOSS		2
	2-11	★ S8-059-035-020	LOADING PLATE L SEMI ASSY		1
	2-12	★ S8-059-030-040	LOADING BLOCK L		1
	2-13	★ S8-000-030-370	ROLLER POST ST		2
	2-14	★ S8-059-030-070	T LOADING GEAR R		1
	2-15	★ S8-059-030-050	LOADING BLOCK R		1
	2-16	★ S8-059-035-010	LOADING BASE SEMI ASSY		1
	2-17	★ S8-059-035-030	LOADING PLATE R SEMI ASSY		1
	2-18	★ S8-059-030-090	LOADING GEAR SPRING R		1
	2-19	---	CONNECTOR BRACKET		1
	2-20	★ S8-059-010-260	DRUM EARTH		1
	2-21	★ S8-059-033-020	LOADING GEAR L ASSY		1
	2-22	★ S8-059-033-030	LOADING GEAR R ASSY		1
	2-23	---	LOADING BASE ASSY		1
	2-24	★ S8-059-130-110	REC ACTUATE SPOKE		1
	2-25	★ S8-059-130-070	REC ACTUATOR		1
	2-26	★ S8-059-130-060	REC LEVER		1
	2-27	★ S8-059-060-180	COLLAR		1
	2-28	★ S8-059-130-140	REC LEVER SPRING		1
	2-29	★ ---	CHASSIS		1

EXPLODED VIEW – 3

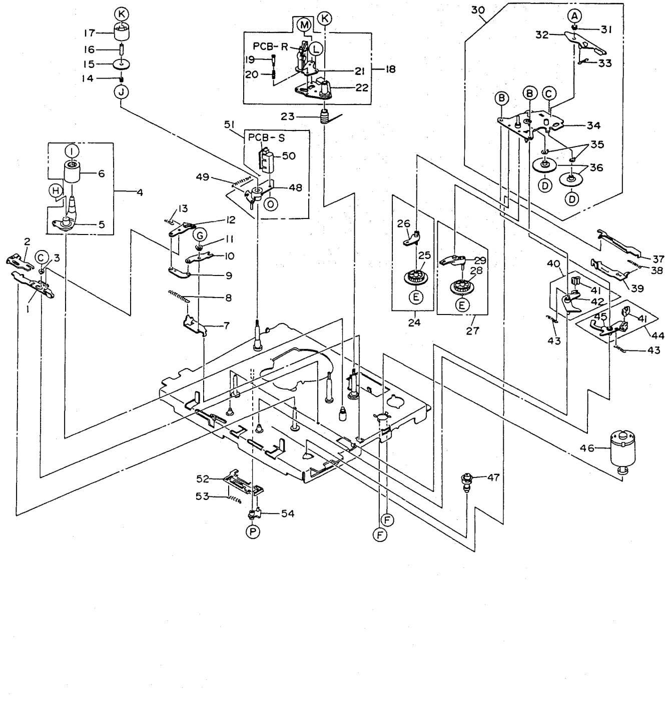
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-999-030-150	PW CUT 2.1×4×0.5	E	S9-096-000-000	TAMS SCREW 2.6×4	I	S9-999-060-030	NYLON WASHER 2.92×5×0.5
B	S9-876-000-000	PW CUT 2.1×5×0.5	F	S9-912-000-000	PW 3.1×6×0.5	J	S9-884-000-000	PW 2.6×6×0.5 CUT
C	S9-191-000-000	C TAPPING SCREW 2.6×4	G	S9-105-000-000	TAMS SCREW 3×4	K	S9-077-000-000	TAMS SCREW 2×4
D	S9-453-000-000	NUT 3.0	H	S9-195-000-000	C TAPPING SCREW 2.6×8			



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	3-1	★S8-059-080-200	BT ACTUATE PLATE SPRING		1
	3-2	★S8-059-103-040	S SOFT BRAKE ASSY		1
	3-3	★S8-059-100-220	S SOFT BRAKE SPRING		1
	3-4	★S8-059-080-170	BAND HOLDER SPRING		1
	3-5	★S8-059-083-020	BT BAND ASSY		1
	3-6	★S8-059-080-150	BAND HOLDER COLLAR		1
	3-7	★S8-059-085-010	BT ARM SEMI ASSY		1
	3-8	★S8-059-080-090	BACK TENSION SUPPORT		1
	3-9	★S8-059-020-230	DAMPER RUBBER		1
	3-10	★S8-059-020-290	TRACKING ADJUSTER		1
	3-11	★S8-059-020-260	TAPE GUIDE SPRING		1
	3-12	★S8-000-030-290	TAPE GUIDE FLANGE D		1
	3-13	★S8-000-030-140	TAPE GUIDE		1
	3-14	★S8-000-030-280	TAPE GUIDE FLANGE C		1
	3-15	★S8-000-030-190	GUIDE CAP		1
	3-16	★S8-059-023-010	OPEN ANGLE ASSY		1
	3-17	★S6-808-080-040	DEW SENSOR EYH-S10R		1
	3-18	★S8-059-100-100	BRAKE ACTUATE BASE SPRING		1
	3-19	★S8-059-100-090	BRAKE ACTUATE BASE		1
	3-20	★S8-059-100-110	BRAKE PLATE		1
	3-21	★S8-059-100-120	BRAKE PLATE SPRING		1
	3-22	★S8-059-100-130	TRIGGER LEVER		1
	3-23	★S8-059-100-140	TRIGGER HOOK		1
	3-24	★S8-059-100-230	TRIGGER LEVER SPRING		1
	3-25	★S8-059-053-010	REEL ASSY		2
	3-26	★S8-059-170-100	RG SLIDE PLATE COLLAR		1
	3-27	★S8-059-170-030	RG SLIDE PLATE		1
	3-28	★S8-059-170-110	RG SLIDE SPRING		1
	3-29	★S8-059-170-090	RG SLIDE BASE		1
	3-30	★S8-059-073-010	METAL HOUSING ASSY		1
	3-31	★S8-059-175-020	RG ARM SEMI ASSY		1
	3-32	S8-059-073-020	CAPSTAN MOTOR ASSY		1

EXPLODED VIEW – 4

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-974-000-000	SL FH SCREW 2×3	G	S9-096-000-000	TAMS SCREW 2.6×4	M	S9-705-000-000	LONG LOCK SCREW 2.6×7
B	S9-097-000-000	TAMS SCREW 2×4	H	S9-999-030-000	PW CUT 5×8×0.5	N	S9-953-000-000	NYLON NUT M3
C	S9-192-000-000	C TAPPING SCREW 2.6×5	I	S9-038-000-000	SCREW 2.6×4	O	S9-953-000-000	SCREW FLANGE 2×3
D	S9-500-000-000	E RING S1.5	J	S9-387-000-000	PLANE WASHER 3×8×0.5	P	S9-876-000-000	PW 2.1×5×0.5 CUT
E	S9-743-000-000	PW CUT 1.6×3.8×0.3	K	S9-953-000-000	NYLON NUT M3			
F	S9-105-000-000	C TAPPING SCREW 3×4	L	S9-999-000-250	SCREW 3.6(SHAPE TYPE)			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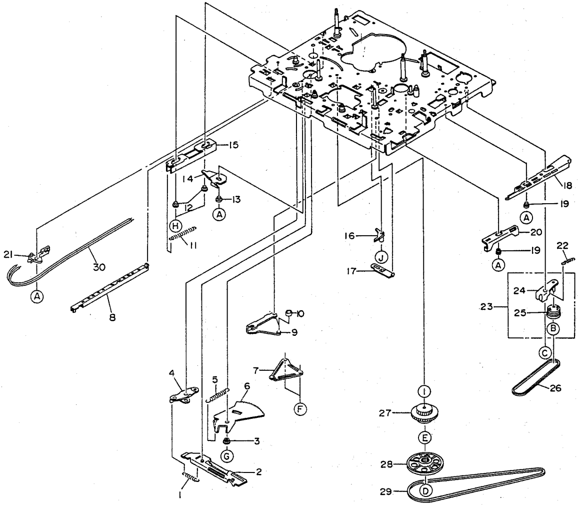
PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	4-1	★S8-059-060-240	P SLIDE PLATE A		1
	4-2	★S8-059-060-250	P SLIDE PLATE B		1
	4-3	★S8-059-060-180	COLLAR		1
	4-4	★S8-059-063-010	PINCH ROLLER ARM ASSY		1
	4-5	★S8-059-065-010	PINCH ROLLER ARM SEMI ASSY		1
	4-6	★S8-000-090-220	PINCH ROLLER A		1
	4-7	★S8-059-060-190	P ANGLE HOLDER		1
	4-8	★S8-059-060-200	P-SPRING, ROLLER		1
	4-9	★S8-059-060-060	JOINT PLATE		1
	4-10	★S8-059-060-050	P ACTUATE ANGLE		1
	4-11	★S8-059-060-180	COLLAR		1
	4-12	★S8-059-060-040	P ACTUATE ARM		1
	4-13	★S8-059-060-090	P-SPRING, ACTUATE ARM		1
	4-14	★S8-059-040-090	TAPE GUIDE FLANGE SPRING		1
	4-15	★S8-059-040-070	TAPE GUIDE FLANGE A		1
	4-16	★S8-059-040-060	IMPEDANCE ROLLER SLEEVE		1
	4-17	★S8-059-040-050	IMPEDANCE ROLLER		1
	4-18	★S8-059-043-080	HEAD BASE ASSY		1
	4-19	★S8-000-060-260	AZIMUTH SPRING SCREW		1
	4-20	★S8-000-060-040	AZIMUTH SPRING		1
	4-21	★S6-204-150-060	ACE HEAD HV225211		1
	4-22	---	HEAD BASE SEMI ASSY		1
	4-23	★S8-059-040-150	HEAD SPRING		1
	4-24	★S8-059-093-140	P GEAR ASSY		1
	4-25	---	PLAY GEAR		1
	4-26	---	P GEAR ARM ASSY		1
	4-27	★S8-059-093-150	RF GEAR ASSY		1
	4-28	---	FF GEAR		1
	4-29	★S8-059-093-040	RF GEAR ARM ASSY		1
	4-30	---	SUB PLATE ASSY		1
	4-31	★S8-059-100-070	T SOFT BRAKE ARM COLLAR		1
	4-32	★S8-059-103-030	T SOFT BRAKE ASSY		1
	4-33	★S8-059-100-060	T-SPRING, SOFT BRAKE ARM		1
	4-34	★S8-059-095-010	SUB PLATE SEMI ASSY		1
	4-35	★S8-000-100-250	WAVE WASHER		2
	4-36	★S8-059-090-6A0	REEL DRIVE GEAR		2
	4-37	★S8-059-100-160	BRAKE LIFTER		1
	4-38	★S8-059-100-180	L BRAKE ACTUATOR SPRING		1
	4-39	★S8-059-100-170	L BRAKE ACTUATOR		1
	4-40	★S8-059-103-010	S BRAKE ARM ASSY		1
	4-41	★S8-059-100-190	BRAKE SHOE		2
	4-42	★S8-059-100-010	S BRAKE ARM		1
	4-43	★S8-059-100-020	BRAKE ARM SPRING		2
	4-44	★S8-059-103-020	T BRAKE ARM ASSY		1
	4-45	★S8-059-100-030	T BRAKE ARM		1
	4-46	S8-059-113-010	LM ASSY		1
	4-47	★S8-059-113-020	TRIGGER BEARING ASSY		1
	4-48	★S8-059-040-040	FE PLATE		1
	4-49	★S8-059-040-080	FE PLATE SPRING		1
	4-50	★S6-204-150-030	FE HEAD HVFMD 0006		1
	4-51	★S8-059-043-020	FE PLATE ASSY		1
	4-52	★S8-059-040-100	FE SLIDE PLATE		1
	4-53	★S8-059-040-120	FE ACTUATE SPRING		1
	4-54	★S8-059-040-110	FE ACTUATE LEVER		1

EXPLODED VIEW – 5

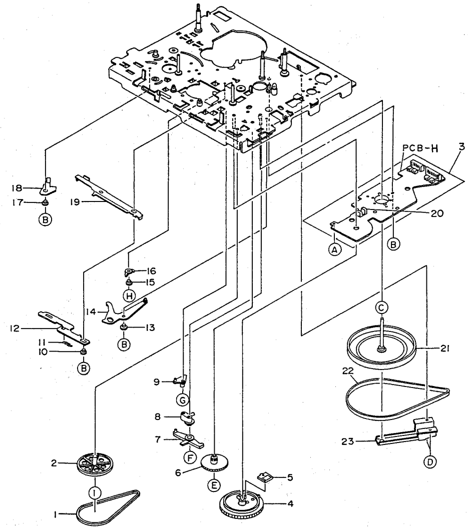
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-192-000-000	C TAPPING SCREW 2.6×5	E	S9-999-060-040	NYLON WASHER 2.98×6×0.3	I	S9-853-000-000	NYLON WASHEER 3.1×6×0.3
B	S9-743-000-000	PW CUT 1.6×3.8×0.5	F	S9-078-000-000	TAMS SCREW 2×5	J	S9-876-000-000	PW CUT 2.1×5×0.5
C	S9-876-000-000	PW CUT 2.1×6×0.5	G	S9-203-000-000	C TAPPING SCREW 3×6			
D	S9-884-000-000	PW CUT 2.6×6×0.5	H	S9-840-000-000	S TAPPNG SCREW 2.6×3.5			



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q, TY
	5-1	★S8-059-120-050	LOADING ACTUATOR SPRING		1
	5-2	★S8-059-125-030	LOADING ACTUATOR SEMI ASSY		1
	5-3	★S8-059-120-100	L GEAR PLATE COLLAR		1
	5-4	★S8-059-125-020	LOADING ACTUATE LEVER SEMI ASSY		1
	5-5	★S8-059-120-120	L GEAR PLATE SPRING		1
	5-6	★S8-059-120-090	L GEAR PLATE		1
	5-7	★S8-059-120-110	LOADING LEVER REINFORCE PLATE		1
	5-8	---	WIRE HOLDER		1
	5-9	★S8-059-125-010	LOADING LEVER SEMI ASSY		1
	5-10	★S8-059-120-130	CAM ROLLER		1
	5-11	★S8-059-080-130	BACK TENSION SPRING		1
	5-12	★S8-059-080-210	BT ACTUATE PLATE COLLAR		2
	5-13	★S8-059-060-180	COLLAR		1
	5-14	★S8-059-080-180	BT ACTUATE LEVER		1
	5-15	★S8-059-080-190	BT ACTUATE PLATE		1
	5-16	★S8-059-170-010	RG ACTUATE ARM		1
	5-17	★S8-059-170-020	RG ACTUATE		1
	5-18	★S8-059-150-070	L BRAKE PLATE		1
	5-19	★S8-059-060-180	COLLAR		2
	5-20	★S8-059-150-080	EJECT ACTUATOR		1
	5-21	S6-401-011-510	LEAF SWITCH MCV-00321		1
	5-22	★S8-059-150-110	IDLER ARM SPRING		1
	5-23	★S8-059-153-030	E IDLER ARM ASSY		1
	5-24	---	E IDLER ARM SEMI ASSY		1
	5-25	---	EJECT PULLEY		1
	5-26	S8-059-150-060	FL BELT		1
	5-27	★S8-059-093-100	CLUTCH ASSY		1
	5-28	★S8-059-093-010	MIDDLE PULLEY ASSY		1
	5-29	S8-059-090-170	DRIVE BELT		1
	5-30	---	WIRE		2

EXPLODED VIEW – 6

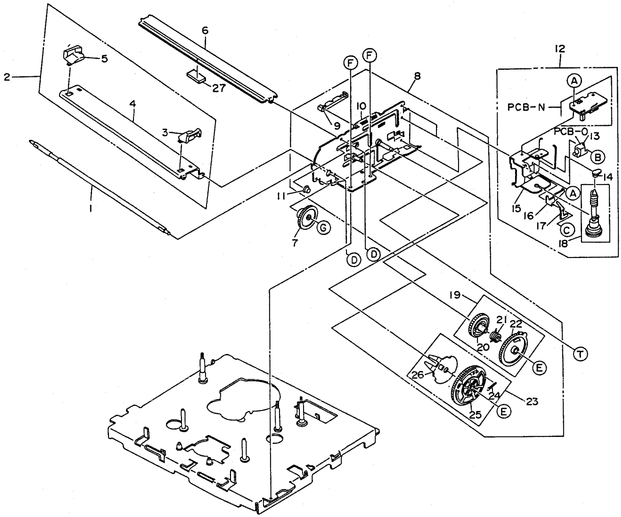
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-671-000-000	S TAPPING SCREW 2.6×5	D	S9-202-000-000	C TAPPING SCREW 3×5	G	S9-884-000-000	PW CUT 2.6×6×0.5
B	S9-192-000-000	C TAPPING SCREW 2.6×5	E	S9-876-000-000	PW CUT 2.1×5×0.5	H	S9-999-180-100	C TAPPING FH SCREW 2.6×4
C	S9-912-000-000	PW 3.1×6×0.5	F	S9-999-030-100	PW CUT 2.6×8×0.5	I	S9-743-000-000	PW CUT 1.6×3.8×0.3



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	6-1	S8-059-110-060	LOADING BELT		1
	6-2	★S8-059-110-030	LOADING PULLEY		1
	6-3	★S8-059-133-020	BASE PLATE ASSY		1
	6-4	★S8-059-110-010	LOADING CAM		1
	6-5	★S8-059-110-020	S BRUSH		1
	6-6	★S8-059-110-040	LOADING GEAR		1
	6-7	★S8-059-110-140	EJECT ARM		1
	6-8	★S8-059-110-130	BRAKE ACTUATE ARM		1
	6-9	★S8-059-110-120	SEARCH ARM B		1
	6-10	★S8-059-060-110	P SLIDER COLLAR		1
	6-11	★S8-059-060-230	P-SPRING, SLIDER		1
	6-12	★S8-059-060-100	P SLIDER		1
	6-13	★S8-059-060-170	P CAM LEVER COLLAR		1
	6-14	★S8-059-065-020	P CAM LEVER SEMI ASSY		1
	6-15	★S8-059-060-130	P CRANK COLLAR		1
	6-16	★S8-059-060-120	P CRANK		1
	6-17	★S8-059-060-180	COLLAR		1
	6-18	★S8-059-080-230	BT RETURN LEVER		1
	6-19	★S8-059-080-100	BT CHANGE PLATE		1
	6-20	S6-808-080-030	REEL SENSOR		1
	6-21	★S8-059-070-140	FLYWHEEL CAPSTAN		1
	6-22	S8-059-070-100	MAIN BELT		1
	6-23	---	FL ANGLE ASSY		1

EXPLODED VIEW – 7

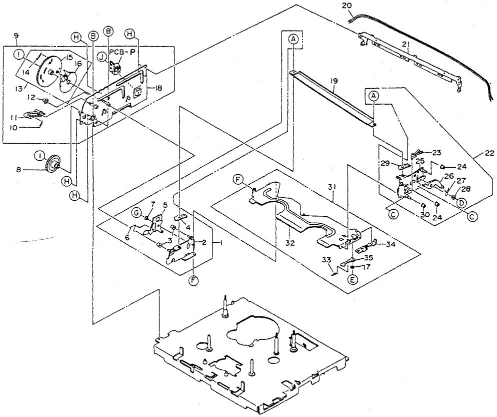
REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-096-000-000	TAMS SCREW 2.6×4	D	S9-096-000-000	TAMS SCREW 2.6×4	G	S9-504-000-000	E RING S2.5
B	S9-078-000-000	TAMS SCREW 2×5	E	S9-504-000-000	E RING S2.5			
C	S9-743-000-000	PW CUT 1.6×3.8×0.3	F	S9-192-000-000	C TAPPING SCREW 2.6×4			



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q'TY
	7-1～8-35	★S8-059-163-370	FRONT LOADING ASSY		1
	7-1	★S8-059-160-600	SYNCHRONIZE SHAFT		1
	7-2	---	FRONT ANGLE ASSY		1
	7-3	★S8-059-160-250	TAPE GUIDE R		1
	7-4	★S8-059-160-180	FRONT ANGLE		1
	7-5	★S8-059-160-240	TAPE GUIDE L		1
	7-6	★S8-059-160-660	UPPER PLATE		1
	7-7	★S8-059-160-170	SYNCHRONIZE GEAR A		1
	7-8	★S8-059-163-390	FRAME R ASSY		1
	7-9	---	OPEN LEVER GUIDE		1
	7-10	---	FRAME R SEMI ASSY		1
	7-11	---	GUIDE SLEEVE		1
	7-12	★S8-059-163-180	C LOAD BRACKET ASSY		1
	7-13	★S8-059-163-160	SENSOR P.C.B RM ASSY		1
	7-14	---	F WORM BEARING A		1
	7-15	---	C ROAD BRACKET SEMI ASSY		1
	7-16	---	IN SW LEVER		1
	7-17	---	S SW LEVER		1
	7-18	★S8-059-163-190	F LOADING CLUTCH ASSY		1
	7-19	★S8-059-163-210	WORM WHEEL ASSY		1
	7-20	---	FRICTION GEAR		1
	7-21	---	FRICTION SPRING		1
	7-22	---	WORM WHEEL		1
	7-23	★S8-059-163-120	LIFT GEAR R ASSY		1
	7-24	---	LP SPRING		1
	7-25	---	LIFT GEAR R		1
	7-26	---	LIFT ARM		1
	7-27	★S8-059-160-720	DAMPER MAT		1

EXPLODED VIEW – 8

REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION	REF.NO.	PART NO.	DESCRIPTION
A	S9-833-000-000	SCREW 2.3×2	E	S9-968-000-000	SL SCREW 2.6×3	I	S9-504-000-000	E RING S2.5
B	S9-192-000-000	C TAPPING SCREW 2.6×4	F	S9-991-000-000	SCREW 2.3×2.5	J	S9-099-000-000	TAMS SCREW 2.6×7
C	S9-556-000-000	SCREW 2.6×3	G	S9-966-000-000	SL SCREW 2×2.5			
D	S9-967-000-000	SL SCREW 2×4	H	S9-096-000-000	TAMS SCREW 2.6×4			



PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q. TY
	7-1～8-35	★S8-059-163-370	FRONT LOADING ASSY		1
	8-1	★S8-059-163-090	SIDE PLATE L ASSY		1
	8-2	---	SIDE PLATE L SEMI ASSY		1
	8-3	---	GUIDE ROLLER		2
	8-4	★S8-059-160-280	CASSETTE PUSH PLATE		1
	8-5	---	C LCOK PLATE L		1
	8-6	---	LOCK PLATE SPRING L		1
	8-7	---	LOCK PLATE COLLAR		1
	8-8	★S8-059-160-170	SYNCHRONIZE GEAR A		1
	8-9	★S8-059-163-380	FRAME L ASSY		1
	8-10	★S8-059-160-680	LIFT LEVER SPRING		1
	8-11	★S8-059-160-670	LIFT LEVER		1
	8-12	★S8-000-220-240	GUIDE SLEEVE		1
	8-13	★S8-059-163-140	LIFT GEAR L ASSY		1
	8-14	---	LP SPRING		1
	8-15	---	LIFT GEAR L		1
	8-16	---	LIFT ARM		1
	8-17	---	COLLAR		1
	8-18	---	FRAME L SEMI ASSY		1
	8-19	★S8-000-220-650	TOP STAY		1
	8-20	---	END SENSOR WIRE		1
	8-21	★S8-059-160-090	REAR ANGLE		1
	8-22	★S8-059-163-080	SIDE PLATE R ASSY		1
	8-23	---	LOCK RELEASE LEVER		1
	8-24	---	GUIDE ROLLER		2
	8-25	---	SIDE PLATE R SEMI ASSY		1
	8-26	---	OPEN LEVER		1
	8-27	---	OPEN LEVER SPRING		1
	8-28	---	OPEN LEVER COLLAR		1
	8-29	★S8-059-160-280	CASSETTE PUSH PLATE		1
	8-30	---	GUIDE ROLLER		1
	8-31	★S8-059-163-060	CASSETTE HOLDER ASSY		1
	8-32	---	CASSETTE HOLDER		1
	8-33	---	LOCK SPRING		1
	8-34	---	SLIDE PLATE		1
	8-35	---	C LOCK PLATE A		1

■ ACCESSORIES／PACKAGE LIST

PART NO. CHANGED TO	REF. NO.	PART NO.	DESCRIPTION	COMMON MODEL	Q,TY
	1	★81-JUC-904-010	INSTRUCTION BOOKLET SH	※	1
	2	★81-034-593-010	CORD,RF PAL		1
	3	★87-034-755-010	AC CORDSET ASSY E		1
	4	★80-JUB-666-010	REMOTE UNIT RC－TM10	※	1

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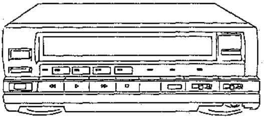
HV-M110S

SERVICE MANUAL



VIDEO CASSETTE PLAYER

- BASIC VIDEO MECHANISM : TN – 5900N2LRN – 186
- TYPE K,Z

SPECIFICATIONS

Recording/playback system
Video: rotary two-head helical scan system
Audio: fixed head

Video signal
PAL/MESECAM color signal, 625 lines, 50 fields
NTSC color signal, 525 lines, 60 fields

Recording/Playback time
PAL/MESECAM
4 hours 20 minutes max. with E-260 tape, SP
8 hours 40 minutes max. with E-260 tape, LP(playback only)
NTSC
3 hours max.with T-180 tape, SP
6 hours max. with T-180 tape, LP(playback only)
9 hours max. with T-180 tape, EP(playback only)

Usable cassette
VHS video cassette

Tape width
12.65 mm

Tape speed
PAL/MESECAM
SP:23.39 mm/sec.
LP:11.70mm/sec.(playback only)
NTSC
SP:33.35 mm/sec.
LP:16.67 mm/sec.(playback only)
EP:11.12 mm/sec.(playback only)

RF output
UHF 30 ~ 39 ch

Video input
1.0 Vp-p, 75 ohms unbalanced

Video output
1.0 Vp-p, 75 ohms unbalanced

Audio input
– 10 dBs, 47kohms

Audio output
– 8 dBs, 2.2 k ohms

Operating temperature
5 ℃ – 40 ℃

Input/output
Audio input (AUDIO IN): phono jack (1)
Audio output (AUDIO OUT): phono jack (1)
Video input (VIDEO IN): phono jack (1)
Video output (VIDEO OUT): phono jack (1)
Antenna input (AERIAL): F connector, 75 ohms (1)
Antenna output (RF OUT): F connector, 75 ohms (1)

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
25 watts

Dimensions
270(W) × 95(H) × 355.5(D)mm
(10¾× 3¾× 14in.)

Weight 4.5kg(9.9 lbs)

- Design and specifications are subject to change without notice.

S/M Code No. 09 – 938 – 033 – 301

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STANDARD MAINTENANCE

1. SERVICE SCHEDULE OF COMPONENT

○ : Check ● : Change

DECK		Periodic Service Schedule			
Ref. No.	Parts Name	1000 h	2000 h	3000 h	4000 h
2-2	UPPER DRUM	○	●	○	●
2-5	DRUM EARTH			●	
3-5	BT BAND ASSY		●		●
3-17	CAPSTAN MOTOR ASSY		●		●
3-25	REEL ASSY			●	
4-6	PINCH ROLLER A		●		●
4-21	ACE HEAD HV224206			●	
4-41	BRAKE SHOE		●		●
4-46	LM ASSY			●	
4-49	FULL ERASE HEAD			●	
5-26	FL BELT		●		●
5-19	CLUTCH ASSY		●		●
5-8	DRIVE BELT		●		●
6-1	LOADING BELT		●		●
6-22	MAIN BELT		●		●

NOTE :

1. Clean all parts for the tape transport.
   Upper Drum with video head／Pinch Roller A／ACE Head
2. After cleaning up the parts, perform all DECK ADJUSTMENT.

2. CLEANING

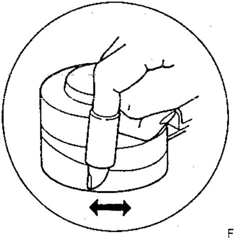
1. Cleaning of "Video Head" (See Figure－1)
   Head cleaning by using a chamois skin.

－ Procedure －

1) Remove the "Cabinet, Steel".
2) Put on a glove (thin type) to avoid touching the "Upper Drum"and "Lower Drum"with bare hand.
3) Put a few drops of alcohol on the chamois skin, and by slightly placing it against the "Head Tip", allow the "Upper Drum"to turn the right and left.

－ Remark －

1) The video head is a very hard material, but since it is very thin, avoid cleaning it vertically.
2) Wait for the cleaned part to dry out, before operating the unit.
3) Do not reuse stained chamois skin.



Fig－1

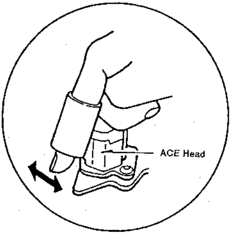
2. Cleaning of "ACE Head" (See Figure－2)
   Head cleaning by using a chamois skin.

－ Procedure －

1) Remove the "Cabinet, Steel".
2) Put a few drops of alcohol on the chamois skin, clean up the "Audio Control Head", being careful not to damage the "Upper Drum" and other tape running parts.

－ Remark －

1) Avoid cleaning "ACE Head" vertically.
2) Wait for the cleaned part to dry well, before operating the unit.

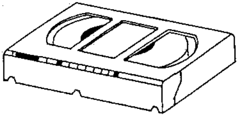


Fig－2

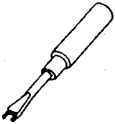
1.SERVICE JIG AND TOOLS

Ref. No.	Name	Adjustment
J-1	Torque Meter (FSJ-VHT-063)	Back Tension
J-2	Alignment Tape (TTV-N1E) or (TTV-P1L)	Envelope Waveform, X-Value
J-3	Alignment Tape (TTV-N1) or (TTV-P1)	ACE Head Height+/ACE Head Tilt
J-4	———	———
J-5	Alignment Tape (TTV-N2) or (TTV-P2)	ACE Head Azimuth
J-6	Special Driver (SMALL)	Tape Running Position, Envelope Waveform (Guide roller)
J-7	Special Driver (LARGE)	X Value
J-8	Box Driver M3	Tape Running Position, X Value, Envelope Waveform
J-9	Mirror	Tape Transportation Cheak
J-10	EXT. PCB. KIT (A) 〔Parts No. 09-054-012-010〕	HA (For repair of circuit board)

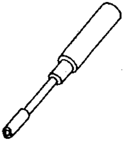
J－1～J－5



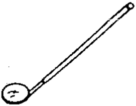
J－6, J－7



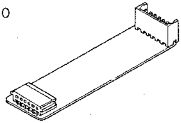
J－8



J－9



J－10



2.HOW TO ASSEMBLE THE JIGS

1. Assembling the J – 10 (See Figure – 1)

Place the circuit board with the solder side down as shown in the figure above and assemble the connectors, taking care of their directions.

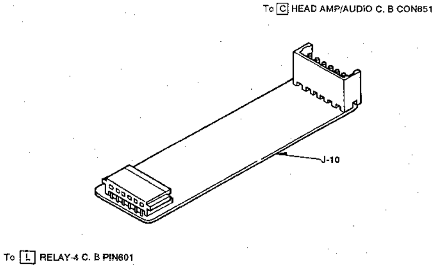

To C HEAD AMP/AUDIO C. B CON651
J-10
To L RELAY-4 C. B PIN601

Fig – 1

2. Using the J – 10 (See Figure – 2)

Use this jig when servicing the "Head C. B".

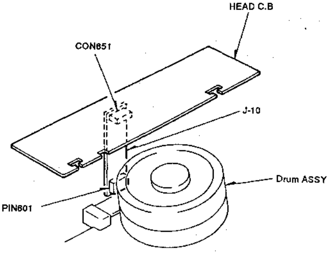

HEAD C.B
CON651
J-10
Drum ASSY
PIN601

Fig – 2

DISASSEMBLY INSTRUCTIONS

1. "Cabinet, Steel" and "Cabinet Front ASSY" Removal (See Figure – 1)
   1) Remove 4 screws (Ⓐ) holding the "Cabinet, Steel".
   2) Releases 5 hooks to remove the "Cabinet Front ASSY".

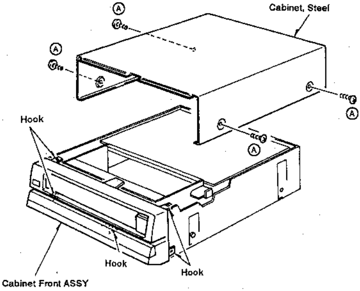

Ⓐ
Ⓐ
Cabinet, Steel
Ⓐ
Ⓐ
Hook
Hook
Hook
Cabinet Front ASSY

Fig – 1

2. "Main C. B" Removal (See Figure – 2)
   1) Remove 5 screws (Ⓐ) holding the "Main C. B".

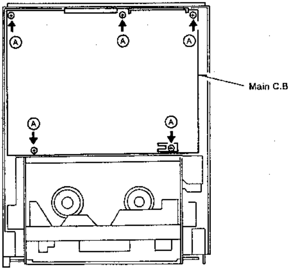


Fig – 2

3. "Mechanism ASSY" Removal (See Figure – 3)
   1) Remove screw (Ⓐ) and disconnect the connector to remove the "Head C. B".
   2) Remove 3 screws (Ⓑ) holding the "Mechanism ASSY".

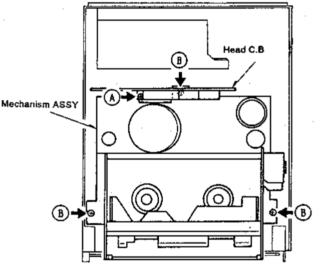

Head C.B
Ⓑ
Ⓐ
Mechanism ASSY
Ⓑ
Ⓑ

Fig – 3

4. "Front Loading ASSY" Removal (See Figure – 4)
   1) Remove "Main Belt".
   2) Remove 4 screws (Ⓐ).
   3) Release the hooks on both sides and remove the "Front Loading ASSY". (Since it is difficult to release these hooks, hold the front of the "Front Loading ASSY" and shake it up and down to release them.)

5. "Cassette Load Bracket ASSY" Removal (See Figure – 4)
   1) Remove 1 screw (Ⓑ).
   2) Take off the "Cassette Load Bracket ASSY".

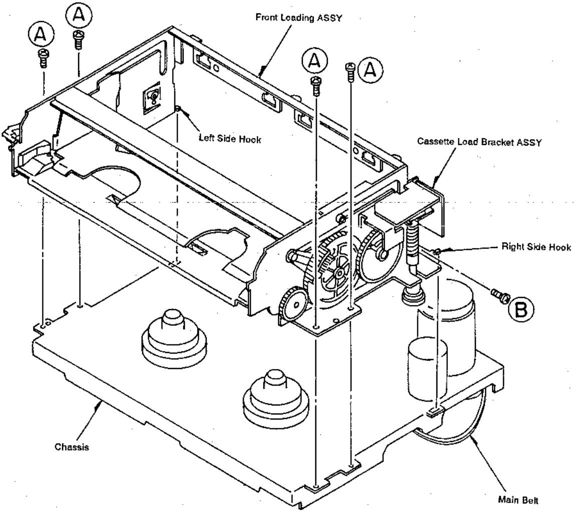

Ⓐ
Ⓐ
Front Loading ASSY
Ⓐ
Ⓐ
Left Side Hook
Cassette Load Bracket ASSY
Right Side Hook
Ⓑ
Chassis
Main Belt

Fig.-4

6. "Photo Sensor ASSY" Removal (See Figure – 5)

6 – 1. "Lamp Holder ASSY" Removal

1) Remove 1 screw (Ⓐ) and take off the "T Soft Brake ASSY", "T – Spring, Soft Brake Arm".

2) Release the "Lamp Holder ASSY" from hook (a) of the chassis and turn it counterclockwise to remove it from the chassis.

6 – 2. "Switch C. B", "Sensor Guide" and "Start Sensor C. B" Removal

1) Remove 1 screw (Ⓑ) and take off the "Switch C. B".

2) Remove 1 screw (Ⓒ) and take off the "Sensor Guide".

3) Remove 1 screw (Ⓓ) and take off the "Start Sensor C. B".

6 – 3. "Sensor Guide" and "End Sensor C. B" Removal

1) Remove 1 screw (Ⓔ) and take off the "Sensor Guide".

2) Remove 1 screw (Ⓕ) and take off the "End Sensor C. B".

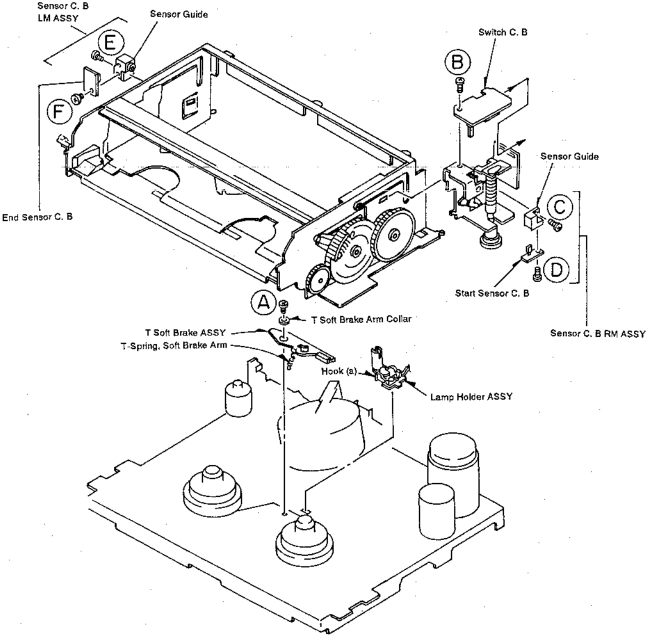

Sensor C. B
LM ASSY
Sensor Guide
E
F
End Sensor C. B
Switch C. B
B
Sensor Guide
C
D
Start Sensor C. B
Sensor C. B RM ASSY
A
T Soft Brake Arm Collar
T Soft Brake ASSY
T-Spring, Soft Brake Arm
Hook (a)
Lamp Holder ASSY

Fig.-5

7. "FE Plate" and "ACE Head" Removal (See Figure – 6)

1. "FE Plate" Removal
   1) Remove Nut (Ⓐ).
   2) Take out the "FE Plate Spring" and pull up the "FE Plate".
   3) Remove 1 screw (Ⓑ) and take off the "Full Erase Head".
2. "ACE Head" Removal
   1) Remove 2 screws (Ⓒ× 1, Ⓓ× 1) and "Azimuth Spring".
   2) Remove 1 screw (Ⓔ) and "ACE Head".

8. "Rec Actuator" Removal (See Figure – 6)

1) Remove "Wire Holder".
2) Remove screw (Ⓕ) and take off the "Leaf Switch".
3) Remove screw (Ⓖ) and take off the "FE Actuate Lever", "FE Slide Plate" and "FE Actuate Spring".
4) Remove screw (Ⓗ) and take off the "Rec Lever", and "Rec Lever Spring".
5) Remove "Rec Actuate Spoke".
6) Remove "Rec Actuator".

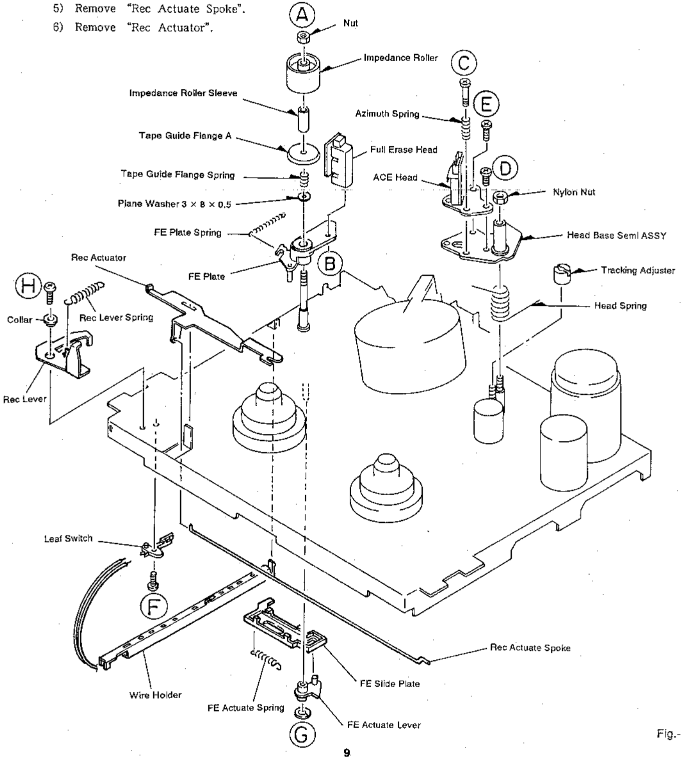

Ⓐ
Nut
Impedance Roller
Ⓒ
Impedance Roller Sleeve
Ⓔ
Azimuth Spring
Tape Guide Flange A
Full Erase Head
Tape Guide Flange Spring
ACE Head
Ⓓ
Plane Washer 3 × 8 × 0.5
Nylon Nut
FE Plate Spring
Head Base Semi ASSY
Rec Actuator
FE Plate
Ⓑ
Tracking Adjuster
Ⓗ
Head Spring
Collar
Rec Lever Spring
Rec Lever
Leaf Switch
Ⓕ
Rec Actuate Spoke
FE Slide Plate
Wire Holder
FE Actuate Spring
FE Actuate Lever
Ⓖ

Fig.-6

9. "Reel Drive Gear" Removal (See Figure – 7)
    1) Remove the "Front Loading ASSY".
    2) Remove "Drive Belt".
    3) Remove Poly – Washer (Ⓐ) and "Middle Pulley ASSY".
    4) Remove 3 screws (Ⓑ× 1, Ⓒ× 2) and take off the "Sub Plate ASSY".
    5) Remove Nylon – Washer (Ⓓ) and take off the "Clutch ASSY".
    6) Remove 1 screw (Ⓔ) and take off the "T – Spring, Soft Brake Arm".
    7) Take off the "T Soft Brake ASSY".
    8) Remove 2 "E – Rings (Ⓕ)" and take off the 2 "Reel Drive Gear".

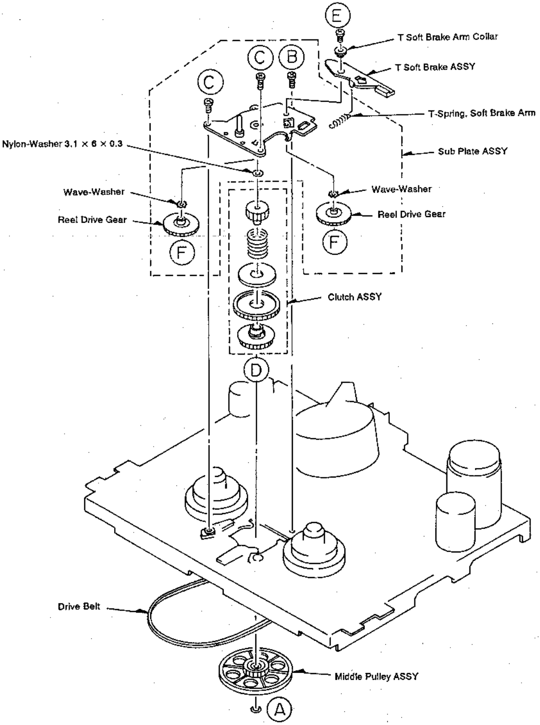

E
T Soft Brake Arm Collar
C
B
T Soft Brake ASSY
C
T-Spring, Soft Brake Arm
Nylon-Washer 3.1 × 6 × 0.3
Sub Plate ASSY
Wave-Washer
Wave-Washer
Reel Drive Gear
Reel Drive Gear
F
F
Clutch ASSY
D
Drive Belt
Middle Pulley ASSY
A

Fig.-7

10. "BT Band ASSY" And "BT Arm Semi ASSY" Removal (See Figure – 8)

1) Remove the "Front Loading ASSY".
2) Remove Poly – Washer (Ⓐ) and "BT Actuate Plate Spring" from the "BT Arm Semi ASSY".
3) Remove 1 screw (Ⓑ) and "Band Holder Spring".
4) Take off the "BT Band ASSY" from the "BT Arm Semi ASSY".

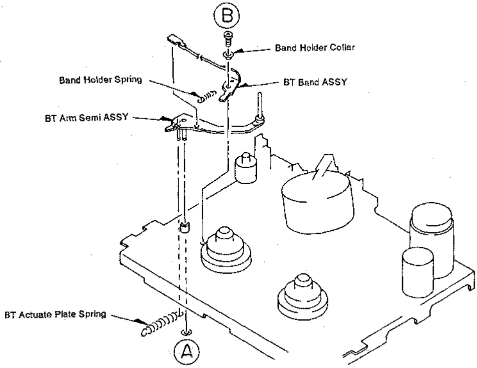

Ⓑ
Band Holder Collar
Band Holder Spring
BT Band ASSY
BT Arm Semi ASSY
BT Actuate Plate Spring
Ⓐ

Fig.-8

11. "Reel ASSY" Removal (See Figure – 9)

1) Remove the "Front Loading ASSY", "Gear Holder ASSY" and "BT Band ASSY".
2) Remove 1 screw (Ⓐ) and the "Back Tension Support".
3) Remove the 2 "Reel ASSY".

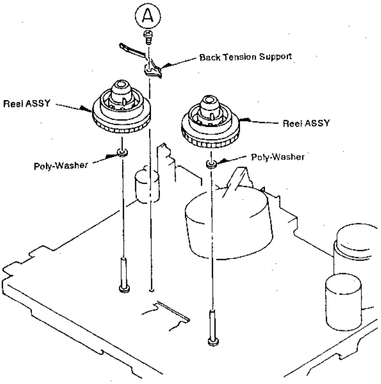

Ⓐ
Back Tension Support
Reel ASSY
Reel ASSY
Poly-Washer
Poly-Washer

Fig.-9

12. "Cylinder ASSY" Removal (See Figure – 10)

1) Remove the "Front Loading ASSY".
2) Pull out the "RELAY C. B – 5" from the "Cylinder Motor TM85".
3) Remove 1 screw (Ⓐ) and take off the "Drum Earth".
4) Remove 3 screws (Ⓑ) and take off the "Cylinder ASSY".

= Remarks =

Take off the "Cylinder ASSY" carefully without any damage.

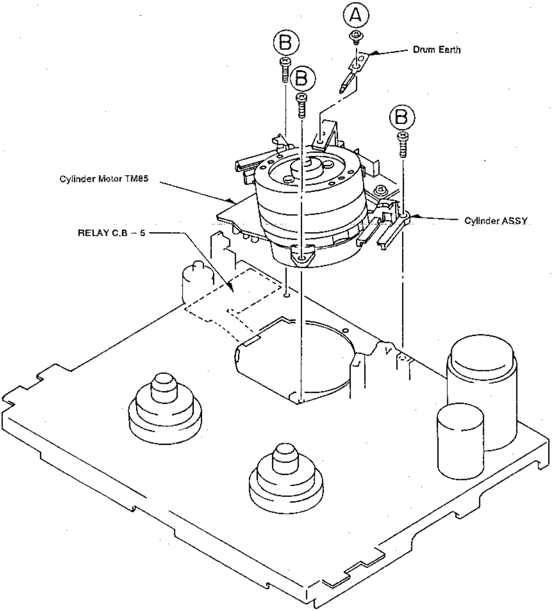

Ⓐ
Ⓑ
Ⓑ
Drum Earth
Ⓑ
Cylinder Motor TM85
Cylinder ASSY
RELAY C.B – 5

Fig.-10

13. "Upper Drum" Removal (See Figure – 11)
   1) Remove the "Front Loading ASSY".
   2) Remove 1 screw (Ⓐ) and take off the "Drum Earth Bracket".
   3) Remove 2 screws (Ⓑ) and take off the "Upper Drum".

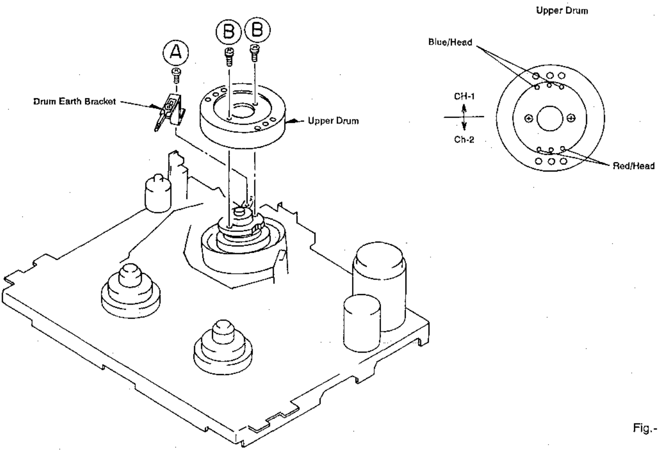

Ⓑ
Ⓑ
Ⓐ
Drum Earth Bracket
Upper Drum
Upper Drum
Blue/Head
CH-1
Ch-2
Red/Head

Fig.-11

= Remark =

1. Use gloves and do not touch the drum surface with bare fingers.
2. If the Video head is defective, replace the complete "Upper Drum" with the Head.
3. When installing "Upper Drum" and "Rotor", "Upper Drum" point ⓐ, "Lower Drum" point ⓑ and "Rotor" point ⓒ, these point ⓐ, ⓑ, ⓒ mast line up each other. Otherwise it will creates problem. (See Figure – 11 – 1)

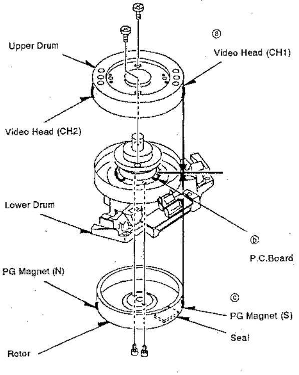
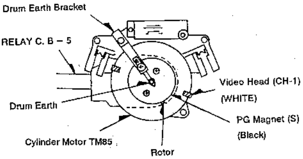

Upper Drum
ⓐ
Video Head (CH1)
Video Head (CH2)
Lower Drum
ⓑ
P.C.Board
PG Magnet (N)
ⓒ
PG Magnet (S)
Seal
Rotor

Fig.-11-1

14. "Cylinder Motor TM85" Removal (See Figure – 12)
   1) Pull out the "RELAY C. B – 5" from the "Cylinder Motor TM85".
   2) Remove 2 screws (Ⓐ) and take off the "Cylinder Motor TM85a".
   3) Remove 3 screws (Ⓑ) and take off the "Cylinder Motor TM85b".


Drum Earth Bracket
RELAY C. B – 5
Video Head (CH-1)
(WHITE)
Drum Earth
PG Magnet (S)
(Black)
Cylinder Motor TM85
Rotor

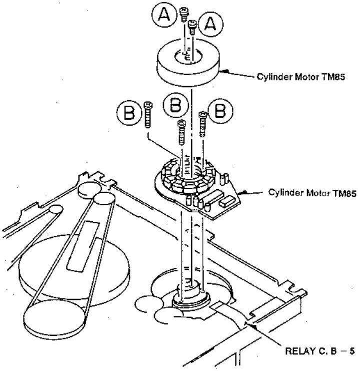

A
A
Cylinder Motor TM85
B
B
B
Cylinder Motor TM85
RELAY C. B – 5

Fig.-12

15. "Capstan Motor ASSY" and "LM ASSY" Removal (See Figure – 13)
   1. "Capstan Motor ASSY" Removal
      1) Take off the "Drive Belt" and "Main Belt".
      2) Remove 2 screws (Ⓐ) and take off the "Capstan Motor ASSY".
   2. "LM ASSY" Removal
      1) Take off the "Fl Belt".
      2) Remove 2 screws (Ⓑ) and take off the "LM ASSY".

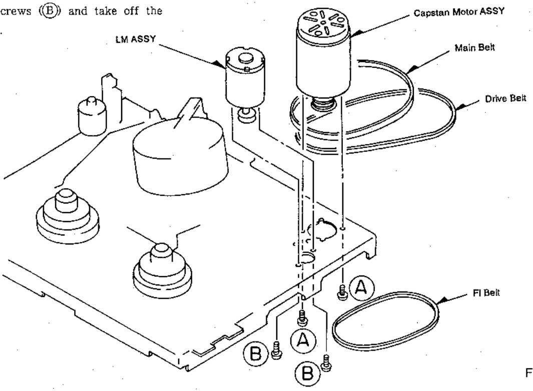

Capstan Motor ASSY
LM ASSY
Main Belt
Drive Belt
A
Fl Belt
A
B
B

Fig.-13

16. "Loading Gear" and "Loading Cam" Removal (See Figure – 14)

1) Take off the "Loading Belt" from the "Loading Pulley".
2) Remove Poly – Washer (Ⓐ) and take off the "Loading Pulley".
3) Remove Poly – Washer (Ⓑ) and take off the "Loading Gear".
4) Remove Poly – Washer (Ⓒ) and take off the "Eject Arm" and the "Brake Actuate Arm".
5) Remove 2 screws (Ⓓ), and take off the "Loading Lever Reinforce Plate" and the "Loading Lever ASSY".
6) Take off the "Loading Cam".

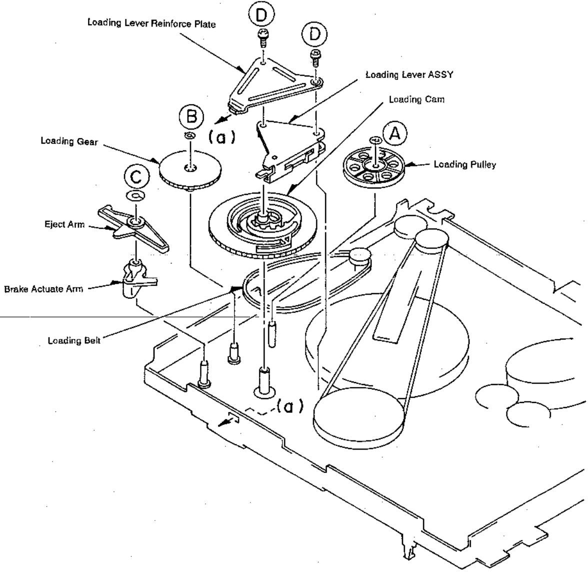

Loading Lever Reinforce Plate
Ⓓ
Ⓓ
Loading Lever ASSY
Loading Cam
Ⓑ
(a)
Ⓐ
Loading Gear
Loading Pulley
Ⓒ
Eject Arm
Brake Actuate Arm
Loading Belt
(a)

Fig.-14

17. "Flywheel Capstan" Removal (See Figure – 15)

1) Remove the Nylon – Washer (Ⓐ).
2) Take off the "Drive Belt" and "Main Belt".
3) Remove 2 screws (Ⓑ) and take off the "FL Angle ASSY".
4) Take off the "Flywheel Capstan".

≡ Remark ≡

Do not miss the Poly – Washer (Ⓒ) when pulling out the "Flywheel Capstan".

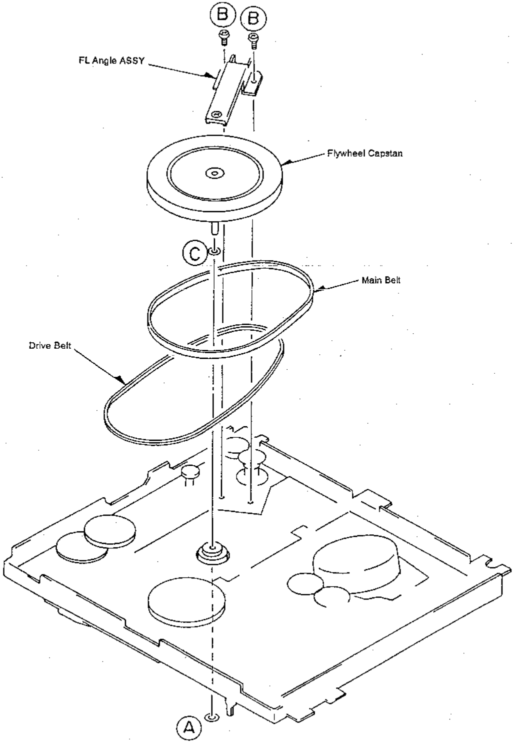

Ⓑ
Ⓑ
FL Angle ASSY
Flywheel Capstan
Ⓒ
Main Belt
Drive Belt
Ⓐ

Fig.-15

18. "Reel Sensor" Removal (See Figure – 16)

1) Remove "Front Loading ASSY" and the "Gear Holder ASSY".
2) Remove "Reel ASSY".
3) Remove "Reel Sensor".

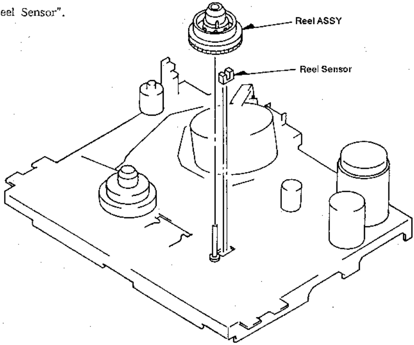

Reel ASSY
Reel Sensor

Fig.-16

19. "Loading Base Semi ASSY" Removal (See Figure – 17)

1) Remove "Cylinder ASSY", "BT Arm Semi ASSY", "BT Band ASSY" and "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and "L Gear Plate Collar", "L Gear Plate".
3) Remove 2 screws (Ⓑ).
4) Take off the "Loading Base Semi ASSY".

= Remark =

When installing the "L Gear Plate", align markings ⓐ on the "T Loading Gear L" and "L Gear Plate".

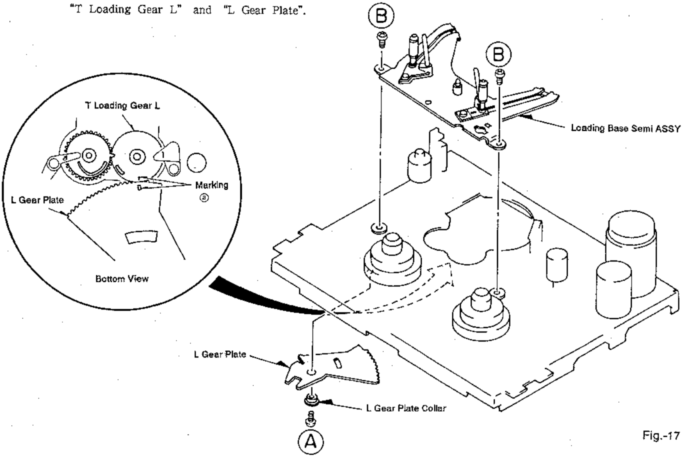

Ⓑ
Ⓑ
Loading Base Semi ASSY
T Loading Gear L
Marking
ⓐ
L Gear Plate
Bottom View
L Gear Plate
L Gear Plate Collar
Ⓐ

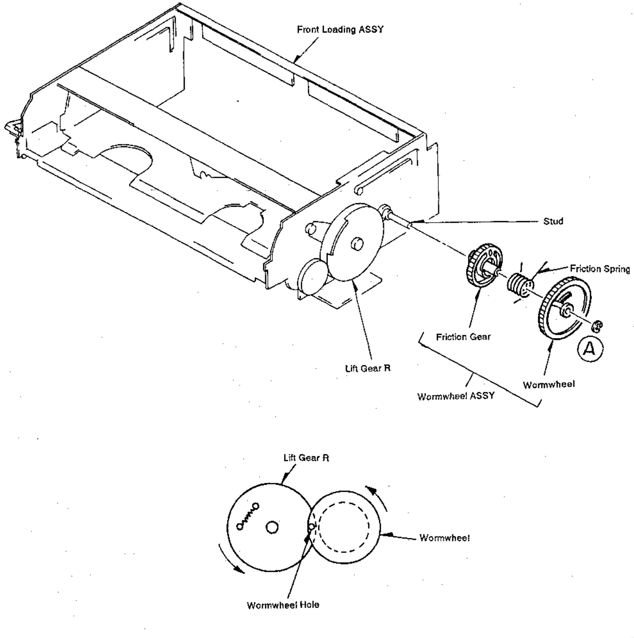
Fig.-17

20. "Wormwheel ASSY" Removal (See Figure – 18)

1. Disassembly
   1) Remove "Front Loading ASSY".
   2) Remove "Cassette Load Bracket ASSY".
   3) Remove E – Ring (Ⓐ).
   4) Remove "Wormwheel ASSY." ("Wormwheel", "Friction Spring", "Friction Gear")
2. Assembly
   1) Turn the "Lift Gear R" fully counterclockwise.
   2) Restore "Wormwheel ASSY" to the stud.

= Remark =

Match "Lift Gear R" to the "Wormwheel Hole" as illustrated.



Front Loading ASSY
Stud
Friction Spring
Friction Gear
Ⓐ
Lift Gear R
Wormwheel
Wormwheel ASSY
Lift Gear R
Wormwheel
Wormwheel Hole

Fig.-18

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
IC			
	80-JU4-701-019		IC, MB87813A
	82-JUF-610-019		IC, MB88202H-1093
	87-002-295-010		IC, LH2464-10
	87-002-528-089		IC, TC7W04F
	87-002-305-089		IC, UPC661G
	87-002-299-089		IC, MB40776 FPT
	87-002-300-089		IC, MB40778 FPT
	87-001-604-089		IC, TC74HCU04F
	87-020-923-089		IC, PST523D
	87-001-794-089		IC, TC74HC157F
	87-002-329-089		IC, TC74HC02AF
	87-001-712-080		IC, M74HC08FP
	87-002-567-089		IC, TC4030BF
	87-002-298-089		IC, TC74HC00AF
	87-002-273-089		IC, NJM2246M
	87-002-304-080		IC, M51271FP
	87-002-741-089		IC, CXL5001M
	87-001-881-089		IC, TC7SU04F
	87-002-870-080		IC, MC74HC74AF
	87-002-485-089		IC, CXL5003M
	82-JUF-615-010		IC, MB88515B-1626K
	87-002-394-019		IC, LB1641
	80-JUB-652-010		IC, HD49754NT
	87-001-777-019		IC, BA6219B
	87-001-773-019		IC, LA7323
	87-001-937-019		IC, CXL5003P
	87-001-939-019		IC, CXL5001P
	87-001-990-019		IC, TC4049 BP
	87-001-901-019		IC, LA7333
	87-002-384-019		IC, NJM2246S
	87-002-449-019		IC, NJM2233BS
	87-001-938-019		IC, LA7311
	87-001-778-010		IC, AN3331K
	87-001-970-019		IC, LA7297
	83-JUS-606-010		IC, HD404302RA39S
	S0-4EH-IC1-010		HIC, HB-100
	S0-051-C02-010		IC, AN1431T-TA
	S1-2E1-C02-020		IC, PQ09RF11
	S1-2E1-C02-030		IC, BA17805T
	87-002-532-010		IC, PQ05RF11
	87-001-790-019		IC, SBX1610-52 UNIT
TRANSISTOR			
	89-324-122-089		TR, 2SC2412K R
	89-110-373-089		C-TR, 2SA1037 S
	87-026-211-089		C-TR, DTA144EK T147
	89-322-233-089		C-TR, 2SC2223F13
	87-026-430-089		C-TR, FMG2
	87-026-355-089		C-TR, FMA2
	87-026-210-089		C-TR, DTC144EK T147
	89-506-210-080		C-FET, 2SK621
	87-026-452-089		TR, 2SA933S S
	89-110-484-089		TR, 2SA1048Y
	87-026-218-089		TR, DTC144ES
	87-026-462-089		TR, 2SC1740S (RS)
	87-026-219-089		TR, DTA144ES
	87-026-298-089		C-TR, FMW1
	87-026-463-089		TR, 2SA933S (RS)
	87-026-313-089		TR, DTC 343TS TP
	89-322-746-089		TR, 2SC2274F
	87-026-245-089		TR, DTC114ES
DIODE			
	87-020-465-089		DIODE, 1SS133 T-72
	87-020-027-089		C-DIODE, 1SS184
	87-027-449-089		ZENER, HZ15-3L
	87-027-416-089		ZENER, HZ3C2
	S0-05D-001-010		DIODE, S1WBA60
	87-020-752-010		DIODE, 1SS202
	87-027-431-010		ZENER, RD6. 2F-B2
	S0-05D-002-010		DIODE, S2LA20-04P15
	S0-4ED-002-040		DIODE, ERB83-006
	S0-05D-002-050		ZENER, RD24F-B2
MAIN C.B			
C2	87-018-121-089		CAP, TC-U 150P-50 B(Z)
C201	87-010-263-089		CAP, E 100-10
C202	87-018-209-089		CAP, TC-U 0. 1-50 F
C203	87-018-134-089		CAP, TC-U 0. 01-16 Y
C204	87-018-134-089		CAP, TC-U 0. 01-16 Y
C211	87-018-134-089		CAP, TC-U 0. 01-16 Y
C212	87-010-263-089		CAP, E 100-10
C213	87-010-263-089		CAP, E 100-10
C221	87-018-209-089		CAP, TC-U 0. 1-50 F
C222	87-010-384-089		CAP, E 100-25 SME
C301	87-015-695-089		CAP, E 1-50 7L
C302	87-010-264-089		CAP, E 100-10 5L
C303	87-010-401-089		CAP, E 1-50 SME
C304	87-018-134-089		CAP, TC-U 0. 01-16 Y
C305	87-010-401-089		CAP, E 1-50 SME
C306	87-010-401-089		CAP, E 1-50 SME
C307	87-018-134-089		CAP, TC-U 0. 01-16 Y
C308	87-010-401-089		CAP, E 1-50 SME
C309	87-010-401-089		CAP, E 1-50 SME
C310	87-018-134-089		CAP, TC-U 0. 01-16 Y
C321	87-010-263-089		CAP, E 100-10
C322	87-018-209-089		CAP, TC-U 0. 1-50 F
C324	87-018-134-089		CAP, TC-U 0. 01-16 Y
C326	87-018-109-089		CAP, TC-U 22P-50 SL
C327	87-018-150-089		CAP, TC-U 18P-50 CH
C328	87-018-134-089		CAP, TC-U 0. 01-16 Y
C330	87-018-209-089		CAP, TC-U 0. 1-50 F
C341	87-010-404-089		CAP, E 4. 7-50 SME
C342	87-010-404-089		CAP, E 4. 7-50 SME
C343	87-018-209-089		CAP, TC-U 0. 1-50 F
C344	87-010-405-089		CAP, E 10-50 SME
C361	87-010-404-089		CAP, E 4. 7-50 SME
C362	87-010-401-089		CAP, E 1-50 SME
C363	87-018-134-089		CAP, TC-U 0. 01-16 Y
C364	87-010-709-089		CAP, E 0. 22-50 BP
C366	87-010-384-089		CAP, E 100-25 SME
C367	87-018-209-089		CAP, TC-U 0. 1-50 F
C368	87-018-209-089		CAP, TC-U 0. 1-50 F
C369	87-018-209-089		CAP, TC-U 0. 1-50 F
C370	87-018-209-089		CAP, TC-U 0. 1-50 F
C371	87-018-209-089		CAP, TC-U 0. 1-50 F
C381	87-018-131-089		CAP, TC-U 1000P-50 B
C382	87-010-382-089		CAP, E 22-25 SME
C383	87-010-265-089		CAP, E 33-16 SME
C384	87-018-123-089		CAP, TC-U 220P-50 B
C385	87-010-404-089		CAP, E 4. 7-50 SME
C386	87-018-119-089		CAP, TC-U 100P-50 B
C401	87-010-374-089		CAP, E 47-10
C402	87-018-205-089		CAP, TC-U 0. 022-25 F
C403	87-010-403-089		CAP, E 3. 3-50 SME
C404	87-018-134-089		CAP, TC-U 0. 01-16 Y
C405	87-010-405-089		CAP, E 10-50 SME
C407	87-010-402-089		CAP, E 2. 2-50 SME
C408	87-018-134-089		CAP, TC-U 0. 01-16 Y
C411	87-018-134-089		CAP, TC-U 0. 01-16 Y
C413	87-018-126-089		CAP, TC-U 390P-50 B
C415	87-018-149-089		CAP, TC-U 15P-50 CH
C416	87-010-131-089		CAP, E 0. 47-50 BP
C417	87-010-131-089		CAP, E 0. 47-50 BP
C418	87-010-131-089		CAP, E 0. 47-50 BP

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C419	87-018-115-089		CAP, TC-U 47P-50 SL
C420	87-018-119-089		CAP, TC-U 100P-50 B
C421	87-018-119-089		CAP, TC-U 100P-50 B
C422	87-018-111-089		CAP, TC-U 27P-50 SL
C424	87-018-122-089		CAP, TC-U 180P-50 B
C426	87-010-405-089		CAP, E 10-50 SME
C432	87-018-125-089		CAP, TC-U 330P-50 B
C433	87-018-117-089		CAP, TC-U 68P-50 SL
C434	87-018-107-089		CAP, TC-U 18P-50 SL
C441	87-010-374-089		CAP, E 47-10
C442	87-010-374-089		CAP, E 47-10
C445	87-018-115-089		CAP, TC-U 47P-50 SL
C446	87-018-119-089		CAP, TC-U 100P-50 B
C447	87-018-115-089		CAP, TC-U 47P-50 SL
C448	87-018-208-089		CAP, TC-U 0.047-50 F
C449	87-018-209-089		CAP, TC-U 0.1-50 F
C450	87-018-134-089		CAP, TC-U 0.01-16 Y
C451	87-018-209-089		CAP, TC-U 0.1-50 F
C452	87-018-134-089		CAP, TC-U 0.01-16 Y
C453	87-018-208-089		CAP, TC-U 0.047-50 F
C454	87-018-109-089		CAP, TC-U 22P-50 SL
C455	87-018-117-089		CAP, TC-U 68P-50 SL
C456	87-018-109-089		CAP, TC-U 22P-50 SL
C457	87-018-208-089		CAP, TC-U 0.047-50 F
C458	87-018-209-089		CAP, TC-U 0.1-50 F
C459	87-018-134-089		CAP, TC-U 0.01-16 Y
C460	87-018-209-089		CAP, TC-U 0.1-50 F
C461	87-018-134-089		CAP, TC-U 0.01-16 Y
C462	87-018-208-089		CAP, TC-U 0.047-50 F
C472	87-018-123-089		CAP, TC-U 220P-50 B
C473	87-010-405-089		CAP, E 10-50 SME
C480	87-018-115-089		CAP, TC-U 47P-50 SL
C486	87-010-935-089		CAP, E 220-16 VR
C487	87-018-205-089		CAP, TC-U 0.022-25 F
C488	87-010-263-089		CAP, E 100-10
C489	87-010-371-089		CAP, E 470-6.3
C490	87-010-374-089		CAP, E 47-10
C491	87-018-134-089		CAP, TC-U 0.01-16 Y
C492	87-010-374-089		CAP, E 47-10
C493	87-018-134-089		CAP, TC-U 0.01-16 Y
C494	87-010-405-089		CAP, E 10-50 SME
C495	87-010-263-089		CAP, E 100-10
C496	87-018-118-089		CAP, TC-U 82P-50 B〈Z〉
C497	87-018-118-089		CAP, TC-U 82P-50 B〈Z〉
C498	87-018-122-089		CAP, TC-U 180P-50 B〈Z〉
C501	87-010-374-089		CAP, E 47-10
C502	87-018-205-089		CAP, TC-U 0.022-25 F
C503	87-018-134-089		CAP, TC-U 0.01-16 Y
C504	87-018-205-089		CAP, TC-U 0.022-25 F
C505	87-018-134-089		CAP, TC-U 0.01-16 Y
C506	87-010-401-089		CAP, E 1-50 SME
C507	87-018-115-089		CAP, TC-U 47P-50 SL
C508	87-010-401-089		CAP, E 1-50 SME
C509	87-015-695-089		CAP, E 1-50 7L
C510	87-018-205-089		CAP, TC-U 0.022-25 F
C511	87-018-209-089		CAP, TC-U 0.1-50 F
C512	87-018-134-089		CAP, TC-U 0.01-16 Y
C513	87-018-119-089		CAP, TC-U 100P-50 B
C514	87-018-134-089		CAP, TC-U 0.01-16 Y
C518	87-018-208-089		CAP, TC-U 0.047-50 F
C519	87-010-401-089		CAP, E 1-50 SME
C520	87-018-134-089		CAP, TC-U 0.01-16 Y
C521	87-018-134-089		CAP, TC-U 0.01-16 Y
C522	87-018-134-089		CAP, TC-U 0.01-16 Y
C523	87-018-134-089		CAP, TC-U 0.01-16 Y
C524	87-018-134-089		CAP, TC-U 0.01-16 Y
C525	87-018-134-089		CAP, TC-U 0.01-16 Y
C526	87-018-134-089		CAP, TC-U 0.01-16 Y
C528	87-018-114-089		CAP, TC-U 39P-50 SL
C532	87-018-134-089		CAP, TC-U 0.01-16 Y

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C534	87-018-134-089		CAP, TC-U 0.01-16 Y
C551	87-018-134-089		CAP, TC-U 0.01-16 Y
C552	87-018-134-089		CAP, TC-U 0.01-16 Y
C553	87-018-134-089		CAP, TC-U 0.01-16 Y
C555	87-018-134-089		CAP, TC-U 0.01-16 Y
C556	87-018-208-089		CAP, TC-U 0.047-50 F
C557	87-018-134-089		CAP, TC-U 0.01-16 Y
C558	87-018-134-089		CAP, TC-U 0.01-16 Y
C559	87-018-134-089		CAP, TC-U 0.01-16 Y
C560	87-018-134-089		CAP, TC-U 0.01-16 Y
C561	87-018-134-089		CAP, TC-U 0.01-16 Y
C562	87-018-134-089		CAP, TC-U 0.01-16 Y
C563	87-018-208-089		CAP, TC-U 0.047-50 F
C564	87-018-134-089		CAP, TC-U 0.01-16 Y
C565	87-018-134-089		CAP, TC-U 0.01-16 Y
C566	87-018-111-089		CAP, TC-U 27P-50 SL
C570	87-018-205-089		CAP, TC-U 0.022-25 F
C591	87-010-405-089		CAP, E 10-50 SME
C592	87-010-405-089		CAP, E 10-50 SME
C593	87-018-134-089		CAP, TC-U 0.01-16 Y
C594	87-018-134-089		CAP, TC-U 0.01-16 Y
C595	87-018-134-089		CAP, TC-U 0.01-16 Y
C597	87-018-134-089		CAP, TC-U 0.01-16 Y
C598	87-010-263-089		CAP, E 100-10
C601	87-010-260-089		CAP, E 47-25 SME
C602	87-018-134-089		CAP, TC-U 0.01-16 Y
C603	87-010-263-089		CAP, E 100-10
C604	87-010-405-089		CAP, E 10-50 SME
C605	87-010-403-089		CAP, E 3.3-50 SME
C606	87-010-403-089		CAP, E 3.3-50 SME
C607	87-018-134-089		CAP, TC-U 0.01-16 Y
C608	87-018-134-089		CAP, TC-U 0.01-16 Y
C609	87-018-121-089		CAP, TC-U 150P-50 B
C610	87-018-134-089		CAP, TC-U 0.01-16 Y
C784	87-018-203-089		CAP, TC-U 8200P-16 Y
CL201	87-030-214-089		VIB, CER KBR6.0MKS
DL501	80-JUB-675-019		DL, ADL-FN1344W
DL502	80-JUB-676-019		DL, ADL-FE2544W
DL503	80-JUB-674-019		DL, ADL-FN1334W
FL401	89-JU8-618-019		FLTR, MXV-7XF 3M
FL501	82-JUF-621-019		FLTR, SBP-4820 4.21M
FL502	82-JUF-622-019		FLTR, SBP-4821 5.06M
FL503	80-JU1-743-019		FLTR, LPF 1.1M SG
FL504	80-JUB-681-019		FLTR, BPF 3.58M SG
FL505	80-JUB-682-019		FLTR, BPF 4.43M SG
J401	87-009-174-010		JACK, PIN 4P YBYB
L201	87-005-440-089		COIL, 47UH FLR50
L202	87-003-154-089		COIL, 220UH
L301	87-005-440-089		COIL, 47UH FLR50
L302	87-006-189-089		COIL, 220UH EL0909
L303	87-006-189-089		COIL, 220UH EL0909
L401	87-005-436-089		COIL, 22UH FLR50
L402	87-003-102-089		COIL, 10UH
L431	87-003-288-089		COIL, 180UH LAL02
L432	87-003-286-089		COIL, 56UH
L441	87-005-436-089		COIL, 22UH FLR50
L442	87-005-436-089		COIL, 22UH FLR50
L443	87-003-150-089		COIL, 68UH
L444	87-003-150-089		COIL, 68UH
L445	87-003-150-089		COIL, 68UH
L446	87-003-150-089		COIL, 68UH
L486	87-005-456-089		COIL, 1000UH FLR50, K
L488	87-005-444-089		COIL, 100UH FLR50
L501	87-005-436-089		COIL, 22UH FLR50
L503	87-003-283-089		COIL, 18UH LAL02
L551	87-003-146-089		COIL, 15UH LAL02
L552	87-003-146-089		COIL, 15UH LAL02
L553	87-003-146-089		COIL, 15UH LAL02
L554	87-003-284-089		COIL, 27UH LAL02
L601	87-003-152-089		COIL, 100UH

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
L602	87-003-102-089		COIL, 10UH
⚠R281	87-029-361-099		FUSE, RES 3.3-1/2W FM
⚠R376	87-029-361-099		FUSE, RES 3.3-1/2W FM
R410	87-025-423-089		RES, M/F 4.7K-1/6W F
RA201	84-487-615-019		ARRAY, R 10KX12 LE
RA202	84-487-615-019		ARRAY, R 10KX12 LE
RA203	80-JUB-657-019		ARRAY, R 10KX10 LE
RA204	80-JUB-656-019		ARRAY, R 10KX5 LE
RF386	80-JUC-609-019		MOD, RF MDLK 6E 815A
SFR301	87-024-438-089		SFR, 220K RH063EC
SFR302	87-024-437-089		SFR, 100K RH063EC
SFR401	87-024-431-089		SFR, 3.3K RH063EC
SFR402	87-024-433-089		SFR, 10K RH063EC
SFR403	87-024-433-089		SFR, 10K RH063EC
SFR404	87-024-429-089		SFR, 1K RH063EC
SFR405	87-024-430-089		SFR, 2.2K RH063EC
SFR406	87-024-430-089		SFR, 2.2K RH063EC
SFR431	87-024-431-089		SFR, 3.3K RH063EC
SFR531	87-024-429-089		SFR, 1K RH063EC
SW401	87-036-185-019		SW, SL2-2-3SSU1
X301	80-JUB-655-080		VIB, XTAL 13.3M
X302	80-JUB-654-080		VIB, XTAL 10.7M
X501	80-JUB-678-080		VIB, XTAL 3.58M
X502	89-JU7-641-080		VIB, XTAL 4.43M

FRONT C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C901	87-015-681-089		CAP, E 10-16 7L
C902	87-018-134-089		CAP, TC-U 0.01-16 Y
D912	87-001-123-089		LED SLZ 981C-02TI
D913	87-001-124-089		LED SLZ 381C-02-T1
D914	87-001-124-089		LED SLZ 381C-02-T1
D915	87-001-124-089		LED SLZ 381C-02-T1
D916	87-001-124-089		LED SLZ 381C-02-T1
D917	87-002-441-089		LED, SLZ-681C-02
D918	87-001-123-089		LED SLZ 981C-02TI
D919	87-002-441-089		LED, SLZ-681C-02
S901	87-036-215-089		SW, TACT EVQ21404M
S902	87-036-215-089		SW, TACT EVQ21404M
S903	87-036-215-089		SW, TACT EVQ21404M
S904	87-036-215-089		SW, TACT EVQ21404M
S905	87-036-215-089		SW, TACT EVQ21404M
S906	87-036-215-089		SW, TACT EVQ21404M
S907	87-036-215-089		SW, TACT EVQ21404M
S908	87-036-215-089		SW, TACT EVQ21404M
S909	87-036-215-089		SW, TACT EVQ21404M
S910	87-036-265-019		SW, SL SSSU02
S911	82-234-644-019		SW, SL 2-2-3 SSSU

HEAD AMP/AUDIO C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C651	87-018-131-089		CAP, TC-U 1000P-50 B
C652	87-015-695-089		CAP, E 1-50 7L
C653	87-018-209-089		CAP, TC-U 0.1-50 F
C654	87-018-209-089		CAP, TC-U 0.1-50 F
C655	87-015-695-089		CAP, E 1-50 7L
C656	87-015-681-089		CAP, E 10-16 7L
C657	87-018-134-089		CAP, TC-U 0.01-16 Y
C658	87-018-134-089		CAP, TC-U 0.01-16 Y
C658	87-018-209-089		CAP, TC-U 0.1-50 F(Z)
C659	87-015-677-089		CAP, E 100-6.3 7L
C660	87-015-684-089		CAP, E 47-16 7L
C661	87-018-115-089		CAP, TC-U 47P-50 SL
C663	87-018-117-089		CAP, TC-U 68P-50 SL
C664	87-018-115-089		CAP, TC-U 47P-50 SL
C666	87-018-117-089		CAP, TC-U 68P-50 SL
C667	87-018-109-089		CAP, TC-U 22P-50 SL
C668	87-018-125-089		CAP, TC-U 330P-50 B
C669	87-018-107-089		CAP, TC-U 18P-50 SL
C670	87-018-134-089		CAP, TC-U 0.01-16 Y

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C671	87-018-134-089		CAP, TC-U 0.01-16 Y
C672	87-018-134-089		CAP, TC-U 0.01-16 Y
C672	87-018-209-089		CAP, TC-U 0.1-50 F(Z)
C673	87-010-260-089		CAP, E 47-25 SME
C674	87-018-134-089		CAP, TC-U 0.01-16 Y
C675	87-018-134-089		CAP, TC-U 0.01-16 Y
C676	87-018-104-089		CAP, TC-U 10P-50 SL
C677	87-018-111-089		CAP, TC-U 27P-50 SL
C678	87-018-104-089		CAP, TC-U 10P-50 SL
C679	87-018-118-089		CAP, TC-U 82P-50 B
C680	87-018-114-089		CAP, TC-U 39P-50 SL
C701	87-018-134-089		CAP, TC-U 0.01-16 Y
C701	87-018-209-089		CAP, TC-U 0.1-50 F(Z)
C702	87-010-384-089		CAP, E 100-25 SME
C703	87-010-405-089		CAP, E 10-50 SME
C704	87-015-684-089		CAP, E 47-16 7L
C711	87-010-404-089		CAP, E 4.7-50 SME
C714	87-015-242-089		CAP, E 2.2-50
C721	87-018-127-089		CAP, TC-U 470P-50 B
C722	87-010-382-089		CAP, E 22-25 SME
C731	87-018-134-089		CAP, TC-U 0.01-16 Y
C732	87-018-195-089		CAP, TC-U 1200P-16 X
C733	87-018-205-089		CAP, TC-U 0.022-25 F
C734	87-010-401-089		CAP, E 1-50 SME
C735	87-010-265-089		CAP, E 33-16 SME
C737	87-010-401-089		CAP, E 1-50 SME
C739	87-018-197-089		CAP, TC-U 1800P-16 X
C741	87-018-123-089		CAP, TC-U 220P-50 B
C743	87-018-131-089		CAP, TC-U 1000P-50 B
C744	87-018-134-089		CAP, TC-U 0.01-16 Y
C745	87-015-684-089		CAP, E 47-16 7L
C951	87-018-134-089		CAP, TC-U 0.01-16 Y
C952	87-018-121-089		CAP, TC-U 150P-50 B
C955	87-018-131-089		CAP, TC-U 1000P-50 B
C956	87-018-134-089		CAP, TC-U 0.01-16 Y
C957	87-018-134-089		CAP, TC-U 0.01-16 Y
C958	87-018-202-089		CAP, TC-U 6800P-16 X
C959	87-018-134-089		CAP, TC-U 0.01-16 Y
C959	87-018-209-089		CAP, TC-U 0.1-50 F(Z)
C960	87-015-681-089		CAP, E 10-16 7L
L651	87-005-444-089		COIL, 100UH FLR50
L652	87-003-149-089		COIL, 47UH
L653	87-003-282-089		COIL, 12UH
L654	87-003-102-089		COIL, 10UH
L655	87-003-288-089		COIL, 180UH LAL02
L656	87-003-147-089		COIL, 22UH
L657	87-005-444-089		COIL, 100UH FLR50
L658	87-003-150-089		COIL, 68UH
L659	87-003-151-089		COIL, 82UH LAL02
L701	87-005-239-089		COIL, 100UH
L710	87-005-398-089		COIL, 8.2MH LHL06
L951	87-003-149-089		COIL, 47UH
L952	87-003-145-089		COIL, 8.2UH LAL02
T741	82-JUF-616-019		COIL, OSC BIAS-70K

AUTO TRACKING C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C963	87-018-134-089		CAP, TC-U 0.01-16 Y
C964	87-010-263-089		CAP, E 100-10
C965	87-010-263-089		CAP, E 100-10
C966	87-018-134-089		CAP, TC-U 0.01-16 Y
CL951	87-030-258-089		VIB, CER KBR-4.0 MKSTF
L953	87-003-149-089		COIL, 47UH

DIGITAL-21 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C6	87-010-661-089		C-CAP, E 10-16
C60	87-010-452-089		C-CAP, 1-16 F
C61	87-010-452-089		C-CAP, 1-16 F
C62	87-010-452-089		C-CAP, 1-16 F

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C63	87-010-665-089		C-CAP, E 47-6.3
C64	87-010-197-089		C-CAP, S 0.01-25 B
C65	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C66	87-010-665-089		C-CAP, E 47-6.3〈Z〉
C67	87-010-665-089		C-CAP, E 47-6.3〈Z〉
C68	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C69	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C70	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C71	87-010-197-089		C-CAP, S 0.01-25 B
C72	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C73	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C74	87-010-779-089		C-CAP, E 100-6.3
C75	87-010-779-089		C-CAP, E 100-6.3
C76	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C77	87-010-314-089		C-CAP, S 22P-50 CH
C78	87-010-314-089		C-CAP, S 22P-50 CH
C79	87-010-151-089		C-CAP, S 7P-50 CH
C80	87-010-314-089		C-CAP, S 22P-50 CH
C81	87-010-314-089		C-CAP, S 22P-50 CH
C82	87-010-153-089		C-CAP, S 9P-50 CH
C83	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C84	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C85	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C86	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C87	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C88	87-010-452-089		C-CAP, 1-16 F〈Z〉
C89	87-010-779-089		C-CAP, E 100-6.3〈Z〉
C90	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C91	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C92	87-010-779-089		C-CAP, E 100-6.3〈Z〉
C93	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C94	87-010-661-089		C-CAP, E 10-16〈Z〉
C95	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C96	87-010-779-089		C-CAP, E 100-6.3〈Z〉
C97	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C98	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C99	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C100	87-012-157-089		C-CAP, S 330P-50 CH
C101	87-010-665-089		C-CAP, E 47-6.3〈Z〉
C102	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C103	87-010-196-089		C-CAP, S 0.1-25 F
C104	87-010-311-089		C-CAP, S 12P-50 CH
C105	87-010-178-089		C-CAP, S 1000P-50 B
C106	87-010-316-089		C-CAP, S 33P-50 CH
C107	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C108	87-010-779-089		C-CAP, E 100-6.3〈Z〉
C109	87-010-779-089		C-CAP, E 100-6.3〈Z〉
C111	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C112	87-010-175-089		C-CAP, S 560P-50 SL
C113	87-010-956-089		C-CAP, S 0.068-25 B
C114	87-010-196-089		C-CAP, S 0.1-25 F
C116	87-012-157-089		C-CAP, S 330P-50 CH
C117	87-010-322-089		C-CAP, S 100P-50 CH
C118	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C131	87-012-349-089		C-CAP, S 1000P-50 CH
C132	87-012-349-089		C-CAP, S 1000P-50 CH
C301	87-010-194-089		C-CAP, S 0.047-25 F〈Z〉
D1	87-002-345-089		C-VARI-CAP, 1T363
FL4	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL4	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL5	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL5	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL6	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL6	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL7	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL7	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL8	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL8	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL9	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL9	80-JU4-218-089		FLTR, EMI STB102KB〈K〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
FL10	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL10	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL11	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL11	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL12	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL12	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL13	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL13	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
FL14	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL14	80-JU4-218-089		FLTR, EMI STB102KB〈K〉
L10	87-005-547-089		COIL, 47UH J FLR25
L11	87-005-547-089		COIL, 47UH J FLR25
L12	87-005-547-089		COIL, 47UH J FLR25
L13	87-005-547-089		COIL, 47UH J FLR25〈Z〉
L14	87-005-547-089		COIL, 47UH J FLR25〈Z〉
L15	87-005-547-089		COIL, 47UH J FLR25〈Z〉
L16	87-005-547-089		COIL, 47UH J FLR25〈Z〉
L17	87-005-750-089		C-COIL, 3.3UH LEM3225
SFR100	87-024-380-089		C-SFR, 680K RH03AAA
SFR101	87-024-380-089		C-SFR, 680K RH03AAA
TC3	87-011-192-089		C-TRIMER, CTZ30C
X3	80-JUC-603-089		VIB, XTAL 14.31818MHZ
X3	80-JUC-601-089		VIB, XTAL 14.31MHZ〈K〉
X4	80-JUC-604-089		VIB, XTAL 17.73447MHZ
X4	80-JUC-602-089		VIB, XTAL 17.173MHZ〈K〉

DIGITAL-22 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C2	87-010-779-089		C-CAP, E 100-6.3
C3	87-010-197-089		C-CAP, S 0.01-25 B
C4	87-010-665-089		C-CAP, E 47-6.3
C5	87-010-452-089		C-CAP, 1-16 F
C7	87-010-779-089		C-CAP, E 100-6.3
C8	87-010-197-089		C-CAP, S 0.01-25 B
C9	87-010-197-089		C-CAP, S 0.01-25 B
C10	87-010-197-089		C-CAP, S 0.01-25 B
C11	87-010-180-089		C-CAP, S 1500P-50 B
C12	87-010-661-089		C-CAP, E 10-16
C13	87-010-661-089		C-CAP, E 10-16
C14	87-010-661-089		C-CAP, E 10-16
C16	87-010-175-089		C-CAP, S 560P-50 SL
C17	87-012-349-089		C-CAP, S 1000P-50 CH
C18	87-010-197-089		C-CAP, S 0.01-25 B
C20	87-010-197-089		C-CAP, S 0.01-25 B
C21	87-010-452-089		C-CAP, 1-16 F
C22	87-010-665-089		C-CAP, E 47-6.3
C23	87-010-197-089		C-CAP, S 0.01-25 B
C24	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C25	87-010-452-089		C-CAP, 1-16 F
C26	87-010-154-089		C-CAP, S 10P-50 CH〈Z〉
C26	87-010-156-089		C-CAP, S 12P-50 CH〈K〉
C27	87-010-152-089		C-CAP, S 8P-50 CH〈Z〉
C27	87-010-154-089		C-CAP, S 10P-50 CH〈K〉
C28	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C29	87-010-154-089		C-CAP, S 10P-50 CH
C30	87-010-152-089		C-CAP, S 8P-50 CH〈Z〉
C30	87-010-312-089		C-CAP, S 15P-50 CH〈K〉
C31	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C32	87-010-197-089		C-CAP, S 0.01-25 B
C33	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C34	87-010-178-089		C-CAP, S 1000P-50 B
C35	87-010-178-089		C-CAP, S 1000P-50 B
C36	87-010-194-089		C-CAP, S 0.047-25 F
C37	87-010-194-089		C-CAP, S 0.047-25 F
C38	87-010-450-089		C-CAP, 0.47-16 F
C39	87-010-452-089		C-CAP, 1-16 F
C40	87-010-779-089		C-CAP, E 100-6.3
C41	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C42	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉
C43	87-010-197-089		C-CAP, S 0.01-25 B〈Z〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C44	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C45	87-010-661-089		C-CAP, E 10-16
C46	87-010-665-089		C-CAP, E 47-6.3
C47	87-010-665-089		C-CAP, E 47-6.3
C48	87-010-661-089		C-CAP, E 10-16(Z)
C49	87-010-661-089		C-CAP, E 10-16(Z)
C50	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C120	87-010-316-089		C-CAP, S 33P-50 CH(Z)
C120	87-010-319-089		C-CAP, S 56P-50 CH(K)
C121	87-010-316-089		C-CAP, S 33P-50 CH(Z)
C121	87-010-312-089		C-CAP, S 15P-50 CH(K)
C123	87-010-175-089		C-CAP, S 560P-50 SL
C152	87-010-176-089		C-CAP, S 680P-50 SL
C172	87-010-176-089		C-CAP, S 680P-50 SL
C200	87-010-318-089		C-CAP, S 47P-50 CH
C201	87-010-746-089		C-CAP, TN 10-4
C202	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C203	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C204	87-010-661-089		C-CAP, E 10-16(Z)
C205	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C206	87-010-196-089		C-CAP, S 0.1-25 F
C207	87-010-692-089		C-CAP, E 10-16 BP
C208	87-010-746-089		C-CAP, TN 10-4(Z)
C209	87-010-452-089		C-CAP, 1-16 F(Z)
C210	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C231	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C232	87-010-197-089		C-CAP, S 0.01-25 B(Z)
FL1	81-JX5-638-019		FLTR, MZV-25C 2.5MLP
FL2	83-JUS-611-019		FLTR, MZV-35L TWINBPF
FL3	80-JU4-682-019		FLTR, MYV-251 3MLP
FL15	81-JX5-637-019		FLTR, MXV-501 DLE Q
FL16	80-JU4-683-019		FLTR, MZV-29V 6MLPF
L1	87-005-573-089		C-COIL, 47UH K FLC32
L2	87-005-547-089		COIL, 47UH J FLR25
L5	87-005-547-089		COIL, 47UH J FLR25
L6	87-005-573-089		C-COIL, 47UH K FLC32
L151	87-003-297-089		C-COIL, 180UH MLF3225
L171	87-003-297-089		C-COIL, 180UH MLF3225
L201	87-005-573-089		C-COIL, 47UH K FLC32
SFR1	87-024-063-089		C-SFR, 3.3K
SFR2	87-024-131-089		C-SFR, 47K
SFR3	87-024-131-089		C-SFR, 47K
SFR4	87-024-131-089		C-SFR, 47K
SFR5	87-024-063-089		C-SFR, 3.3K
SFR6	87-024-063-089		C-SFR, 3.3K
TC1	87-011-192-089		C-TRIMMER, CTZ30C
TC2	87-011-192-089		C-TRIMMER, CTZ30C
X1	80-JU1-676-080		VIB, XTAL 14.31MHZ
X2	80-JU1-661-080		VIB, XTAL 17.73MHZ

DIGITAL-23 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C153	87-010-196-089		C-CAP, S 0.1-25 F
C154	87-010-746-089		C-CAP, TN 10-4
C155	87-010-452-089		C-CAP, 1-16 F(Z)
C156	87-010-452-089		C-CAP, 1-16 F(Z)
C157	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C158	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C159	87-010-318-089		C-CAP, S 47P-50 CH
C160	87-010-746-089		C-CAP, TN 10-4
C161	87-010-196-089		C-CAP, S 0.1-25 F
C162	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C173	87-010-196-089		C-CAP, S 0.1-25 F
C174	87-010-746-089		C-CAP, TN 10-4
C175	87-010-452-089		C-CAP, 1-16 F(Z)
C176	87-010-452-089		C-CAP, 1-16 F
C177	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C178	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C179	87-010-318-089		C-CAP, S 47P-50 CH
C180	87-010-746-089		C-CAP, TN 10-4
C181	87-010-196-089		C-CAP, S 0.1-25 F
C182	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C191	87-010-661-089		C-CAP, E 10-16(Z)
C192	87-010-452-089		C-CAP, 1-16 F(Z)
C251	87-010-197-089		C-CAP, S 0.01-25 B(Z)
C252	87-010-314-089		C-CAP, S 22P-50 CH
C253	87-010-319-089		C-CAP, S 56P-50 CH
C254	87-010-314-089		C-CAP, S 22P-50 CH
L152	87-005-263-089		C-COIL, 15UH ML3216
L172	87-005-263-089		C-COIL, 15UH ML3216
L191	87-005-263-089		C-COIL, 15UH ML3216
L192	87-005-573-089		C-COIL, 47UH K FLC32
L193	87-005-573-089		C-COIL, 47UH K FLC32
X5	80-JUB-655-080		VIB, XTAL 13.3M

BASE C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
CP1	S6-808-080-030		PHOTO SENSOR, ON1385(REEL)
PCB-H	S8-059-133-022		BASE PCB ASSY

RELAY-1 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-I	S8-059-013-470		RELAY-1 PCB ASSY

RELAY-2 C.B

RELAY-3 C.B

RELAY-4 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-L	S8-059-013-050		RELAY-4 PCB ASSY

RELAY-5 C.B

SWITCH C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-N	S8-059-163-330		SWITCH PCB ASSY(W/S1, 2, 3)

START SENSOR C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-O	S8-059-163-160		SENSOR PCB RM ASSY

END SENSOR C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
PCB-P	S8-059-163-010		SENSOR PCB LM ASSY

LED C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
LED1	S8-059-133-030		LED ASSY(W/PCB-Q)

ACE HEAD C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
ACEH	S6-204-150-060		ACE HEAD HV224206(W/PCB-R)

ERASE HEAD C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
FEH	S6-204-150-030		FULL ERASE HEAD(W/PCB-S)

POWER-1 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠ C101	S0-05C-001-010		CAP, FILM 0.22UF 250V
⚠ F101	S0-05F-001-010		FUSE, 1.6A 250V(K)
⚠ F101	S1-2ZF-001-010		FUSE, 1.6AH 250V(Z)
⚠ J101	S0-4E0-1NL-ET0		CONNECTOR CCT9302-0101
⚠ L101	S1-2EL-001-010		COIL, 33MH 0.3A LF-4D-333

POWER-2 C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C102-1	S0-5EC-010-210		CAP, CERA 4700PF 250V
C102-2	S0-5EC-010-210		CAP, CERA 4700PF 250V
C102-3	S0-5EC-010-210		CAP, CERA 4700PF 250V
C104	S1-222-020-000		CAP, ELECT 150UF 400V
C105	S0-05C-001-050		CAP, FILM 0.047UF 630V
C106	S0-05C-001-060		CAP, CERA 100PF 1KV
C107	S0-05C-001-070		CAP, ELECT 1UF 400V
C203	S0-05C-002-030		CAP, ELECT 680UF 25V
C204	87-010-385-010		CAP, ELECT 220UF 25V
C205	87-010-429-010		CAP, ELECT 680UF 16V
C206	S1-9A0-C02-060		CAP, ELECT 1200UF 10V
C207	87-010-381-010		CAP, ELECT 330UF 16V
C208	87-010-381-010		CAP, ELECT 330UF 16V
C209	S1-2J0-C02-090		CAP, ELECT 560UF 10V
C210	S1-2J0-C02-090		CAP, ELECT 560UF 10V
C211	87-010-221-010		CAP, ELECT 470UF 10V
L201	S0-05L-002-010		COIL, 40UH 1A RD0807A40
L202	S0-05L-002-010		COIL, 40UH 1A RD0807A40
⚠PC101	S0-05P-C01-010		PHOTO COUPLER ON3171 R
R203	87-025-306-010		RES, MF 5.6K 1/4W
R209	S1-9A0-R02-070		RES, 1K 1/4W
R211	S1-9A0-R02-070		RES, 1K 1/4W
R214	87-025-245-010		RES, MF 820 1W
RV201	S0-4ER-V02-010		SFR, 1K 1/10W

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠T101	S0-4ET-001-010		TRANSFORMER T-9009-3

SPEED SEL. C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C1	87-010-452-089		C-CAP, 1-16 F
C2	87-010-452-089		C-CAP, 1-16 F
C3	87-010-452-089		C-CAP, 1-16 F
C4	87-010-197-089		C-CAP, S 0.01-25 B
C10	87-010-197-089		C-CAP, S 0.01-25 B
C13	87-010-197-089		C-CAP, S 0.01-25 B
L1	87-003-102-089		COIL, 10UH

MISCELLANEOUS

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
	S8-059-010-180		UPPER DRUM(W/VIDEO HEAD)
	S8-059-013-040		LOWER DRUM ASSY
DS1	S6-808-080-040		DEW SENSOR EYH-S10R
FB1	80-JU4-217-019		F-BEAD, BP53RB(Z)
M1	S6-004-030-240		CYLINDER MOTOR TM85
M2	S8-059-073-020		CAPSTAN MOTOR ASSY
M3	S8-059-113-010		LOADING MOTOR ASSY
S4	S6-401-011-510		LEAF SW

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip resistor part coding

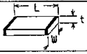
8 8 − □□□ − □□□

A
抵抗コード
Resistor code

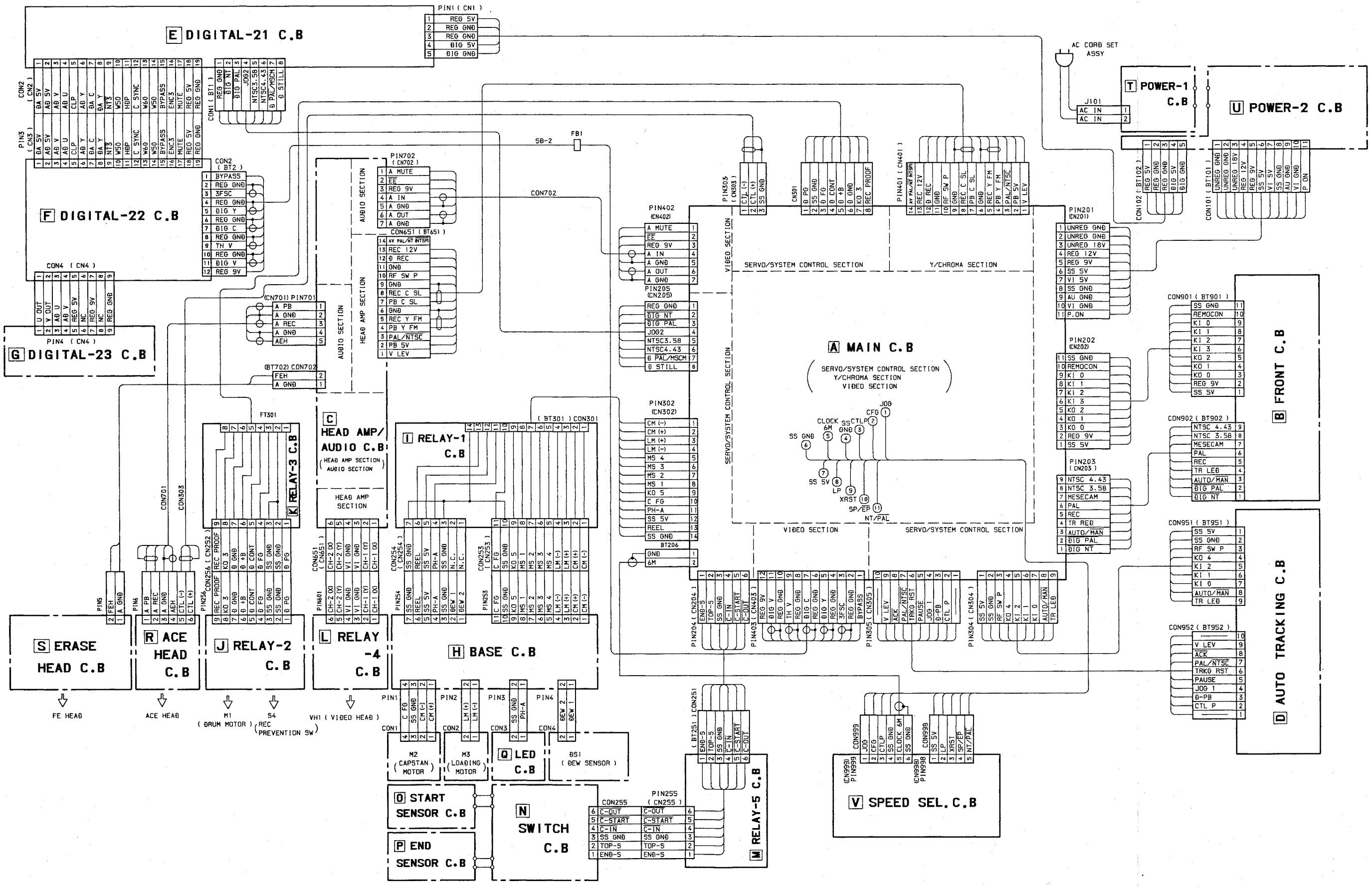
抵抗値
Value of resistor

桁表示
Figure

チップ抵抗
Chip resistor

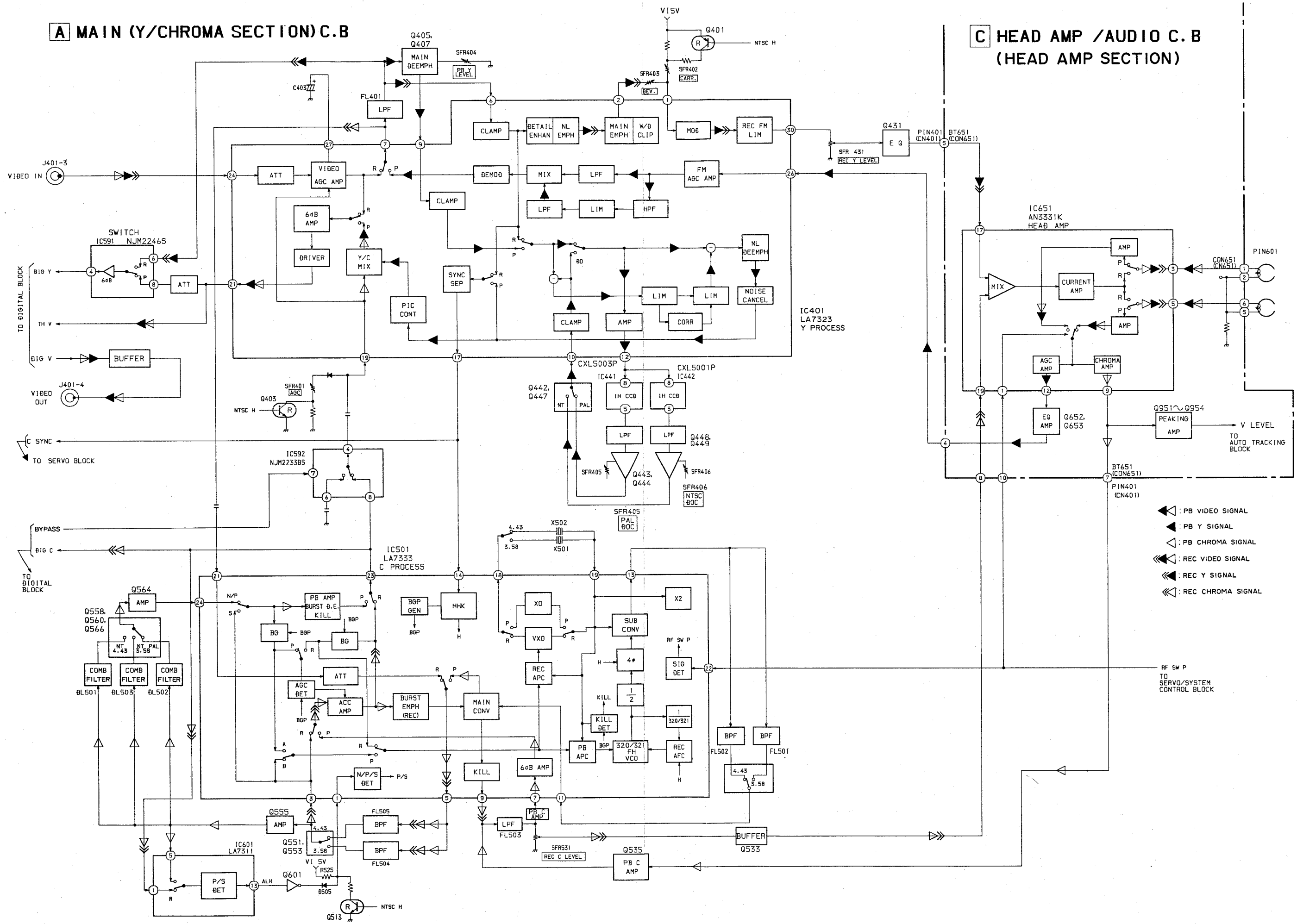
Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm)				Resistor Code : A 抵抗コード : A
				Form/外形	L	W	t	
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

WIRE HARNESS DIAGRAM

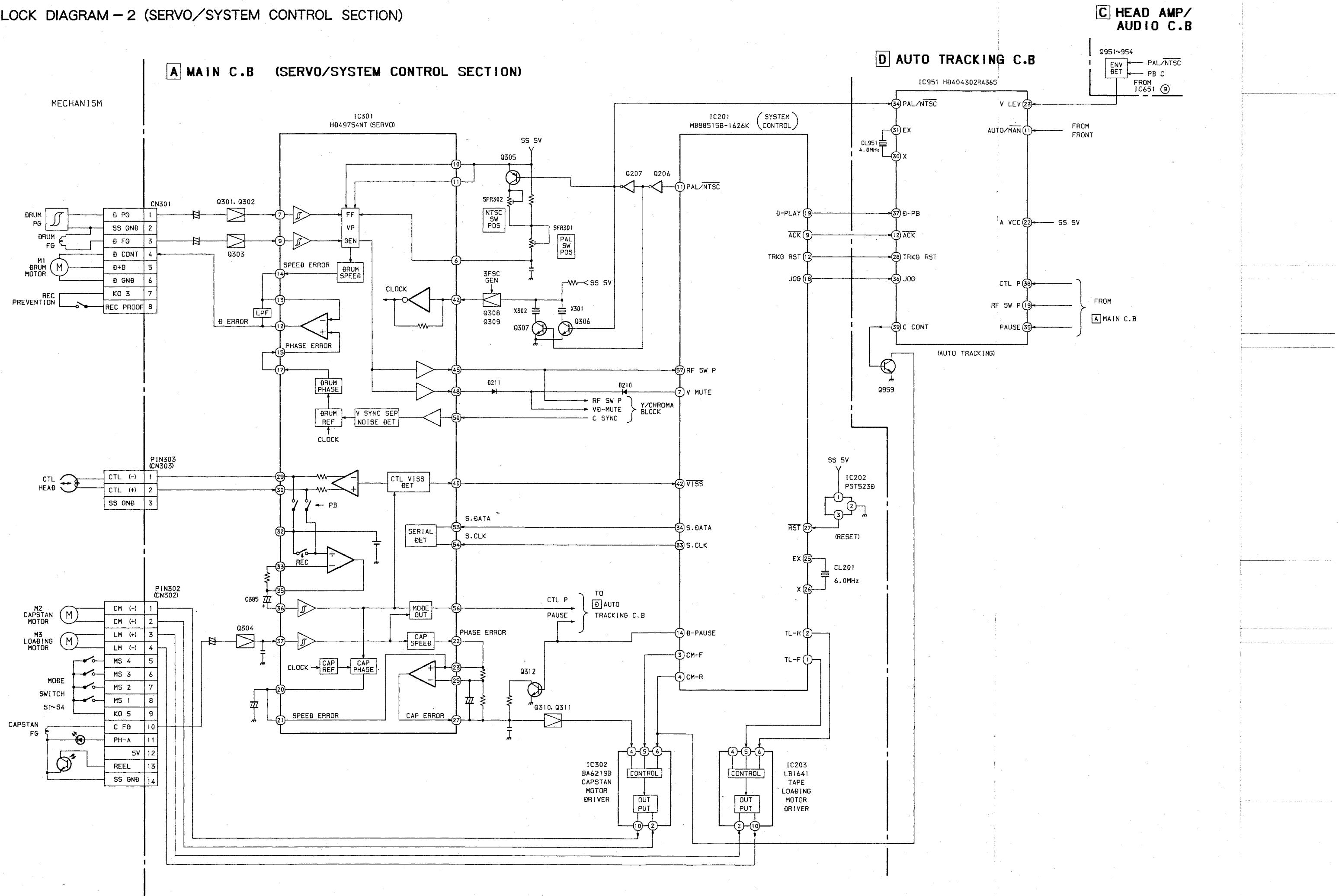


E DIGITAL-21 C.B
F DIGITAL-22 C.B
G DIGITAL-23 C.B
C HEAD AMP/AUDIO C.B
I RELAY-1 C.B
K RELAY-3 C.B
A MAIN C.B
SERVO/SYSTEM CONTROL SECTION
Y/CHROMA SECTION
VIDEO SECTION
B FRONT C.B
D AUTO TRACKING C.B
T POWER-1 C.B
U POWER-2 C.B
AC CORD SET ASSY
S ERASE HEAD C.B
R ACE HEAD C.B
J RELAY-2 C.B
L RELAY-4 C.B
H BASE C.B
Q LED C.B
O START SENSOR C.B
P END SENSOR C.B
N SWITCH C.B
M RELAY-5 C.B
V SPEED SEL. C.B
FE HEAD
ACE HEAD
M1 (DRUM MOTOR)
S4 (REC PREVENTION SW)
VH1 (VIDEO HEAD)
M2 (CAPSTAN MOTOR)
M3 (LOADING MOTOR)
DS1 (DEW SENSOR)
HEAD AMP SECTION
AUDIO SECTION

BLOCK DIAGRAM – 1 (VIDEO SECTION)

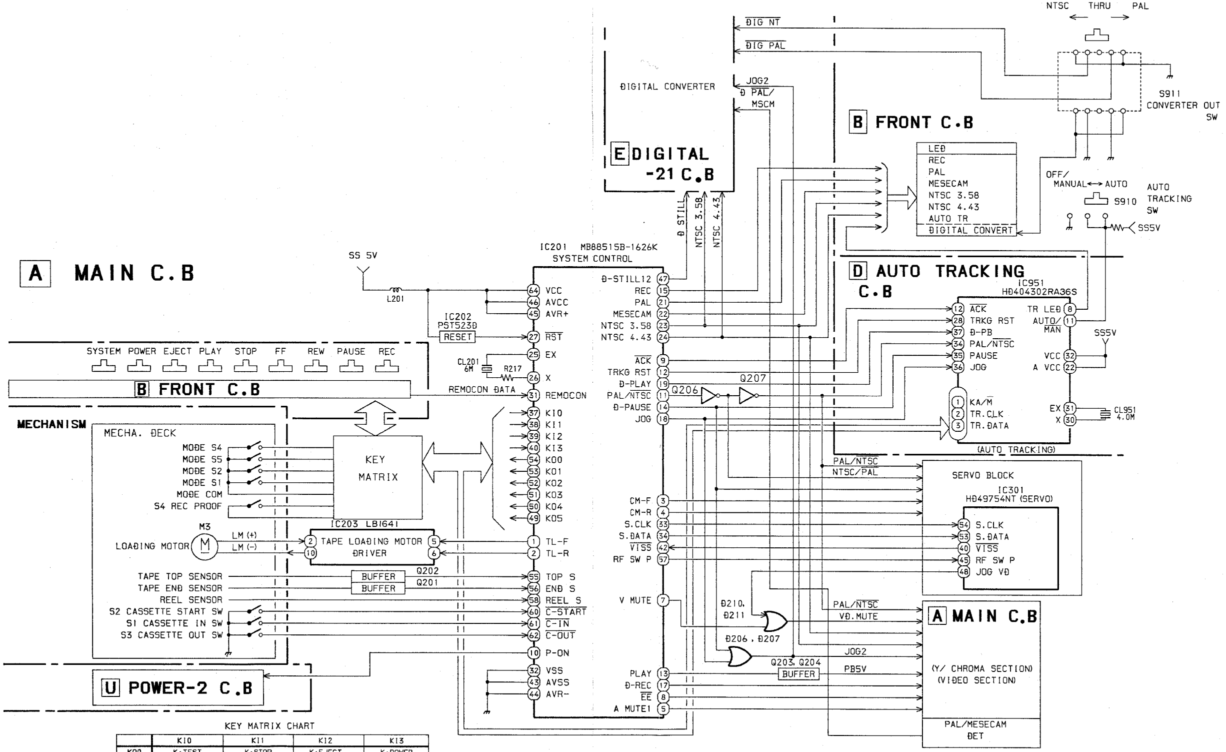

A MAIN (Y/CHROMA SECTION) C.B
C HEAD AMP /AUDIO C.B
(HEAD AMP SECTION)
Q405, Q407
MAIN DEEMPH
SFR404
PB Y LEVEL
C403
FL401
LPF
V15V
Q401
NTSC H
SFR403
DEV.
SFR402
CARR.
CLAMP
DETAIL ENHAN
NL EMPH
MAIN EMPH
W/D CLIP
MOD
REC FM LIM
J401-3
VIDEO IN
ATT
VIDEO AGC AMP
DEMOD
MIX
LPF
FM AGC AMP
LIM
HPF
6dB AMP
DRIVER
Y/C MIX
PIC CONT
SYNC SEP
NL DEEMPH
NOISE CANCEL
AMP
CORR
IC401
LA7323
Y PROCESS
SWITCH
IC591 NJM2246S
TO DIGITAL BLOCK
BIG Y
TH V
BIG V
BUFFER
J401-4
VIDEO OUT
Q403
SFR401
AGC
CXL5003P
IC441
CXL5001P
IC442
1H CCD
Q442, Q447
NT
PAL
Q448, Q449
SFR405
Q443, Q444
SFR406
NTSC DOC
PAL DOC
C SYNC
TO SERVO BLOCK
IC592
NJM2233BS
BYPASS
BIG C
TO DIGITAL BLOCK
IC501
LA7333
C PROCESS
X502
X501
4.43
3.58
Q564
Q558, Q560, Q566
COMB FILTER
DL501
DL503
DL502
N/P
PB AMP BURST D.E. KILL
BGP GEN
HHK
XO
VXO
SUB CONV
X2
BG
BGP
AGC DET
ACC AMP
BURST EMPH (REC)
MAIN CONV
REC APC
SIG DET
RF SW P
KILL DET
1/2
1/320/321
PB APC
320/321 FH VCO
REC AFC
KILL
6dB AMP
N/P/S DET
P/S
BPF
FL502
FL501
Q555
Q551, Q553
FL505
FL504
LPF
FL503
PB C AMP
SFR531
REC C LEVEL
BUFFER
Q533
Q535
PB C AMP
IC601
LA7311
P/S DET
ALH
Q601
V1 5V
R525
D505
Q513
Q431
E Q
SFR 431
REC Y LEVEL
PIN401 (CN401)
BT651 (CON651)
IC651
AN3331K
HEAD AMP
MIX
CURRENT AMP
AGC AMP
CHROMA AMP
EQ AMP
Q652, Q653
CON651 (CN651)
PIN601
Q951～Q954
PEAKING AMP
V LEVEL
TO AUTO TRACKING BLOCK
BT651 (CON651)
PIN401 (CN401)
RF SW P
TO SERVO/SYSTEM CONTROL BLOCK
◀◁ : PB VIDEO SIGNAL
◀ : PB Y SIGNAL
◁ : PB CHROMA SIGNAL
◀◀◁ : REC VIDEO SIGNAL
◀◀ : REC Y SIGNAL
◁◁ : REC CHROMA SIGNAL

BLOCK DIAGRAM – 2 (SERVO/SYSTEM CONTROL SECTION)



C HEAD AMP/ AUDIO C.B
Q951~954
ENV DET
PAL/NTSC
PB C
FROM IC651 ⑨
D AUTO TRACKING C.B
IC951 HD404302RA36S
A MAIN C.B (SERVO/SYSTEM CONTROL SECTION)
MECHANISM
IC301 HD49754NT (SERVO)
IC201 MB88515B-1626K (SYSTEM CONTROL)
SS 5V
Q305
Q207
Q206
PAL/NTSC
SFR302
NTSC SW POS
SFR301
PAL SW POS
CN301
Q301, Q302
Q303
DRUM PG
DRUM FG
M1 DRUM MOTOR
REC PREVENTION
D PG
SS GND
D FG
D CONT
D+B
D GND
KO 3
REC PROOF
FF
VP
GEN
SPEED ERROR
DRUM SPEED
D ERROR
LPF
PHASE ERROR
DRUM PHASE
DRUM REF
V SYNC SEP NOISE DET
CLOCK
3FSC GEN
Q308 Q309
X302
X301
Q307
Q306
D211
D210
RF SW P
V MUTE
VD-MUTE
C SYNC
Y/CHROMA BLOCK
D-PLAY
ACK
TRKG RST
JOG
D-PB
CL951 4.0MHz
EX
X
V LEV
AUTO/MAN
FROM FRONT
A VCC
CTL P
RF SW P
PAUSE
C CONT
FROM A MAIN C.B
(AUTO TRACKING)
Q959
PIN303 (CN303)
CTL HEAD
CTL (-)
CTL (+)
SS GND
CTL VISS DET
VISS
PB
S.DATA
S.CLK
SERIAL DET
REC
C385
IC202 PST523D
RST
(RESET)
CL201 6.0MHz
PIN302 (CN302)
M2 CAPSTAN MOTOR
M3 LOADING MOTOR
MODE SWITCH S1~S4
CAPSTAN FG
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
C FG
PH-A
5V
REEL
SS GND
Q304
MODE OUT
CAP SPEED
CAP REF
CAP PHASE
CAP ERROR
CTL P
PAUSE
TO D AUTO TRACKING C.B
D-PAUSE
CM-F
CM-R
TL-R
TL-F
Q312
Q310, Q311
IC302 BA6219B CAPSTAN MOTOR DRIVER
CONTROL
OUT PUT
IC203 LB1641 TAPE LOADING MOTOR DRIVER

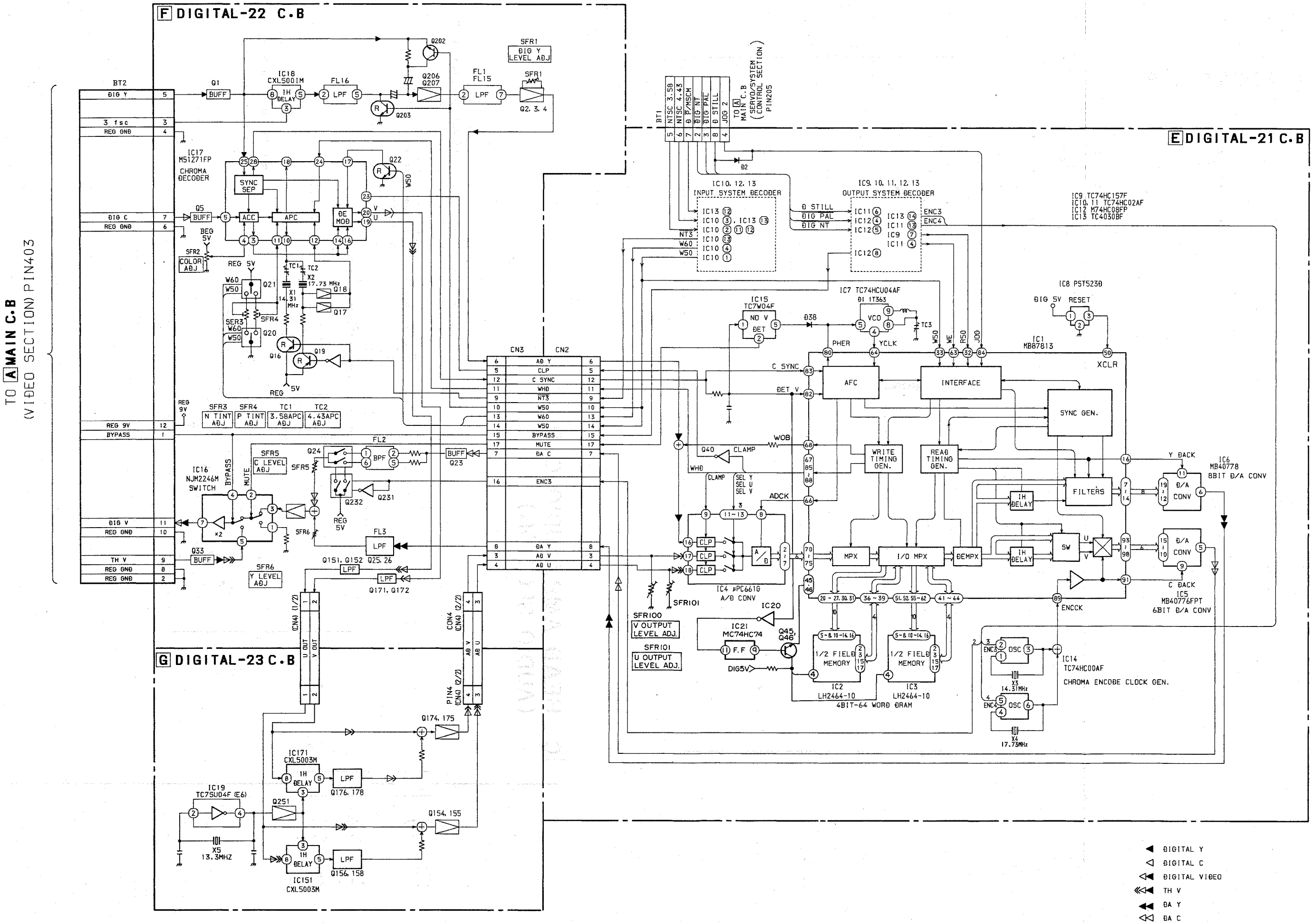
BLOCK DIAGRAM – 3 (SYSTEM CONTROL SECTION)


A MAIN C.B
B FRONT C.B
D AUTO TRACKING C.B
E DIGITAL -21 C.B
U POWER-2 C.B
A MAIN C.B (Y/ CHROMA SECTION) (VIDEO SECTION)
PAL/MESECAM DET
DIGITAL CONVERTER
DIG NT
DIG PAL
JOG2
D PAL/ MSCM
D STILL
NTSC 3.58
NTSC 4.43
NTSC THRU PAL
S911 CONVERTER OUT SW
OFF/ MANUAL ↔ AUTO
S910
AUTO TRACKING SW
SS5V
LED
REC
PAL
MESECAM
NTSC 3.58
NTSC 4.43
AUTO TR
DIGITAL CONVERT
IC951 HD404302RA36S
ACK
TRKG RST
D-PB
PAL/NTSC
PAUSE
JOG
TR LED
AUTO/ MAN
VCC
A VCC
KA/M
TR.CLK
TR.DATA
EX
X
CL951 4.0M
(AUTO TRACKING)
IC201 MB88515B-1626K SYSTEM CONTROL
SS 5V
L201
IC202 PST523D RESET
CL201 6M
R217
REMOCON DATA
VCC
AVCC
AVR+
RST
EX
X
REMOCON
KI0
KI1
KI2
KI3
KO0
KO1
KO2
KO3
KO4
KO5
TL-F
TL-R
TOP S
END S
REEL S
C-START
C-IN
C-OUT
P-ON
VSS
AVSS
AVR-
D-STILL12
REC
PAL
MESECAM
NTSC 3.58
NTSC 4.43
ACK
TRKG RST
D-PLAY
PAL/NTSC
D-PAUSE
JOG
Q206
Q207
CM-F
CM-R
S.CLK
S.DATA
VISS
RF SW P
V MUTE
PLAY
D-REC
EE
A MUTE1
SYSTEM POWER EJECT PLAY STOP FF REW PAUSE REC
MECHANISM
MECHA. DECK
MODE S4
MODE S5
MODE S2
MODE S1
MODE COM
S4 REC PROOF
KEY MATRIX
IC203 LB1641
M3
LOADING MOTOR
LM (+)
LM (-)
TAPE LOADING MOTOR DRIVER
TAPE TOP SENSOR
TAPE END SENSOR
REEL SENSOR
S2 CASSETTE START SW
S1 CASSETTE IN SW
S3 CASSETTE OUT SW
BUFFER
BUFFER
Q202
Q201
SERVO BLOCK
IC301 HD49754NT (SERVO)
S.CLK
S.DATA
VISS
RF SW P
JOG VD
PAL/NTSC
NTSC/PAL
D210, D211
D206, D207
PAL/NTSC
VD.MUTE
JOG2
Q203, Q204 BUFFER
PB5V

KEY MATRIX CHART

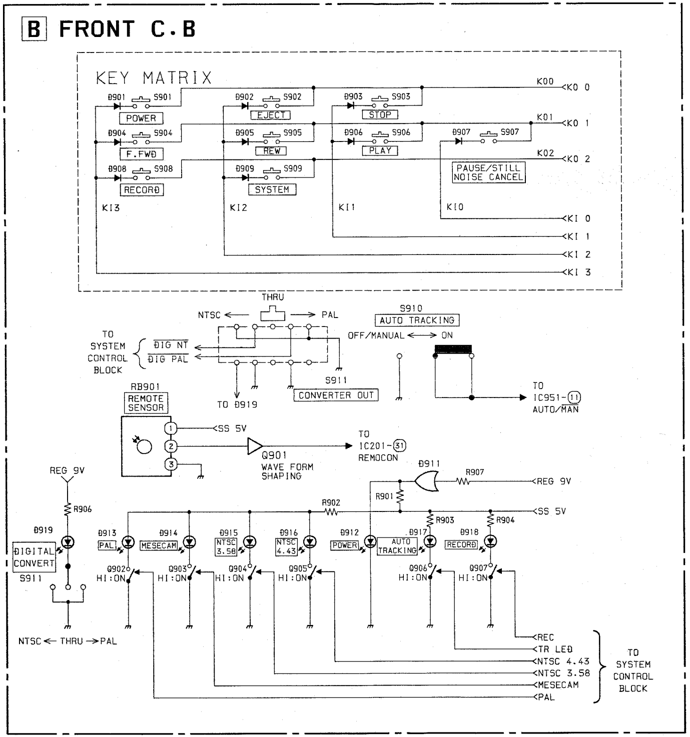
	KI0	KI1	KI2	KI3
KO0	K·TEST	K·STOP	K·EJECT	K·POWER
KO1	K·PAUSE/STILL	K·PLAY	K·REW	K·FF
KO2	K·TRACKING-	K·TRACKING+	K·SYSTEM	K·REC
KO3	REC MODE	VCR	REC PROOF	K·REPEAT
KO4	TRACKING-	TRACKING+	TR·AUTO/MAN	PAL/MESECAM
KO5	MODE SW 1	MODE SW 2	MODE SW 3	MODE SW 4

BLOCK DIAGRAM — 4 (DIGITAL SECTION)

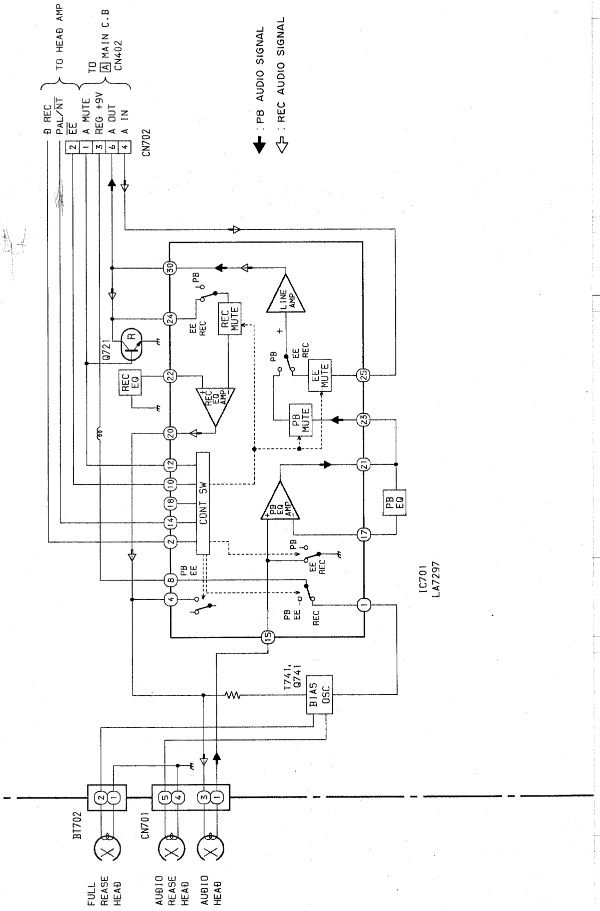

F DIGITAL-22 C.B
E DIGITAL-21 C.B
G DIGITAL-23 C.B
TO A MAIN C.B (VIDEO SECTION) PIN403
BT2
DIG Y
3 fsc
REG GND
DIG C
REG 9V
BYPASS
DIG V
TH V
Q1 BUFF
IC18 CXL5001M 1H DELAY
FL16 LPF
Q202
Q206 Q207
Q203
FL1 FL15 LPF
SFR1 DIG Y LEVEL ADJ
Q2, 3, 4
IC17 M51271FP CHROMA DECODER
SYNC SEP
ACC
APC
DE MOD
Q22
Q5 BUFF
REG 5V
SFR2 COLOR ADJ
W60
W50
Q21
Q18
Q17
SFR3
SFR4
Q20
Q16
Q19
X1 14.31 MHz
X2 17.73 MHz
TC1
TC2
SFR3 N TINT ADJ
SFR4 P TINT ADJ
TC1 3.58APC ADJ
TC2 4.43APC ADJ
IC16 NJM2246M SWITCH
BYPASS
MUTE
SFR5 C LEVEL ADJ
Q24
BPF
FL2
BUFF Q23
Q231
Q232
SFR6
FL3 LPF
Q33 BUFF
SFR6 Y LEVEL ADJ
Q151, Q152 LPF
Q25, 26
LPF Q171, Q172
CN3
CN2
AD Y
CLP
C SYNC
WHD
NT3
W50
W60
BYPASS
MUTE
DA C
ENC3
DA Y
AD V
AD U
CN4 (1/2)
CN4 (2/2)
PIN4 (2/2)
U OUT
V OUT
AD V
AD U
Q174, 175
IC171 CXL5003M 1H DELAY
LPF Q176, 178
IC19 TC7SU04F (E6)
X5 13.3MHZ
Q251
Q154, 155
IC151 CXL5003M 1H DELAY
LPF Q156, 158
BT1
NTSC 3.58
NTSC 4.43
D P/MSCM
DIG NT
DIG PAL
D STILL
JOG 2
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN205
D2
IC10, 12, 13 INPUT SYSTEM DECODER
IC9, 10, 11, 12, 13 OUTPUT SYSTEM DECODER
D STILL
DIG PAL
DIG NT
ENC3
ENC4
IC9 TC74HC157F
IC10, 11 TC74HC02AF
IC12 M74HC08FP
IC13 TC4030BF
IC15 TC7W04F
NO V DET
D38
IC7 TC74HCU04AF
D1 1T363
VCO
TC3
IC8 PST523D
DIG 5V RESET
IC1 MB87813
PHER
YCLK
W50
WE
R50
JOG
XCLR
C SYNC
DET V
AFC
INTERFACE
SYNC GEN.
WOB
Q40 CLAMP
WHD
CLAMP
SEL Y
SEL U
SEL V
ADCK
WRITE TIMING GEN.
READ TIMING GEN.
1H DELAY
FILTERS
Y DACK
IC6 MB40778 8BIT D/A CONV
D/A CONV
CLP
A/D
IC4 μPC661G A/D CONV
MPX
I/O MPX
DEMPX
SW
C DACK
IC5 MB40776FPT 6BIT D/A CONV
ENCCK
SFR100
SFR101
SFR100 V OUTPUT LEVEL ADJ.
SFR101 U OUTPUT LEVEL ADJ.
IC20
IC21 MC74HC74
F.F
Q45, Q46
DIG5V
1/2 FIELD MEMORY
IC2 LH2464-10
IC3 LH2464-10
4BIT-64 WORD DRAM
OSC
X3 14.31MHz
X4 17.73MHz
IC14 TC74HC00AF
CHROMA ENCODE CLOCK GEN.

◀ DIGITAL Y
◁ DIGITAL C
◁◀ DIGITAL VIDEO
≪◀ TH V
◀◀ DA Y
◁◁ DA C
≪ R-Y (V)
≪ B-Y (U)

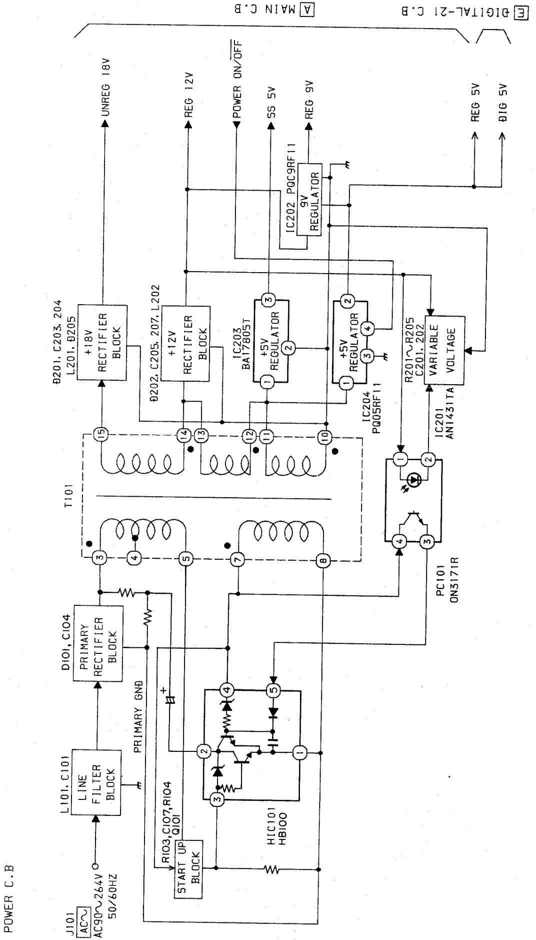
BLOCK DIAGRAM – 5 (FRONT/AUDIO SECTION)


B FRONT C.B
KEY MATRIX
D901 S901 POWER
D902 S902 EJECT
D903 S903 STOP
D904 S904 F.FWD
D905 S905 REW
D906 S906 PLAY
D907 S907 PAUSE/STILL NOISE CANCEL
D908 S908 RECORD
D909 S909 SYSTEM
K00 K01 K02
KO 0 KO 1 KO 2
KI3 KI2 KI1 KI0
KI 0 KI 1 KI 2 KI 3
THRU
NTSC ← → PAL
TO SYSTEM CONTROL BLOCK
DIG NT
DIG PAL
S911 CONVERTER OUT
TO D919
S910 AUTO TRACKING
OFF/MANUAL ←→ ON
TO IC951-⑪ AUTO/MAN
RB901 REMOTE SENSOR
SS 5V
Q901 WAVE FORM SHAPING
TO IC201-㉛ REMOCON
D911
R907 REG 9V
R901
R902 SS 5V
R903 R904
REG 9V
R906
D919 DIGITAL CONVERT
S911
NTSC ← THRU → PAL
D913 PAL
D914 MESECAM
D915 NTSC 3.58
D916 NTSC 4.43
D912 POWER
D917 AUTO TRACKING
D918 RECORD
Q902 HI:ON
Q903 HI:ON
Q904 HI:ON
Q905 HI:ON
Q906 HI:ON
Q907 HI:ON
REC
TR LED
NTSC 4.43
NTSC 3.58
MESECAM
PAL
TO SYSTEM CONTROL BLOCK

C HEAD AMP/AUDIO C.B (AUDIO SECTION)

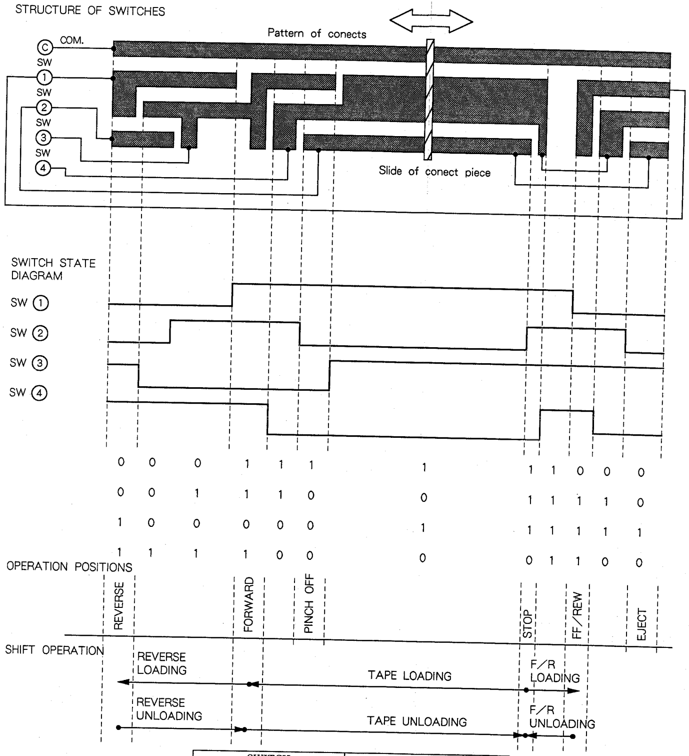

TO HEAD AMP
TO A MAIN C.B CN402
D REC
PAL/NT
EE
A MUTE
REG +9V
A OUT
A IN
CN702
: PB AUDIO SIGNAL
: REC AUDIO SIGNAL
LINE AMP
REC MUTE
PB
EE REC
Q721
R
REC EQ
REC EQ AMP
EE MUTE
PB MUTE
PB EQ AMP
PB EQ
CONT SW
IC701 LA7297
T741, Q741
BIAS OSC
BT702
CN701
FULL REASE HEAD
AUDIO REASE HEAD
AUDIO HEAD

BLOCK DIAGRAM – 6 (POWER UNIT SCTION)


A MAIN C.B
E DIGITAL-21 C.B
UNREG 18V
REG 12V
POWER ON/OFF
SS 5V
REG 9V
REG 5V
DIG 5V
IC202 PQC9RF11
9V REGULATOR
D201, C203, 204
L201, D205
+18V RECTIFIER BLOCK
D202, C205, 207, L202
+12V RECTIFIER BLOCK
IC203 BA17805T
+5V REGULATOR
+5V REGULATOR
IC204 PQ05RF11
R201～R205
C201, 202
VARIABLE VOLTAGE
IC201 AN1431TA
T101
PC101 ON3171R
DI01, CI04
PRIMARY RECTIFIER BLOCK
PRIMARY GND
L101, C101
LINE FILTER BLOCK
R103, C107, R104
Q101
START UP BLOCK
HIC101 HB100
J101 AC～
AC90～264V
50/60HZ
POWER C.B

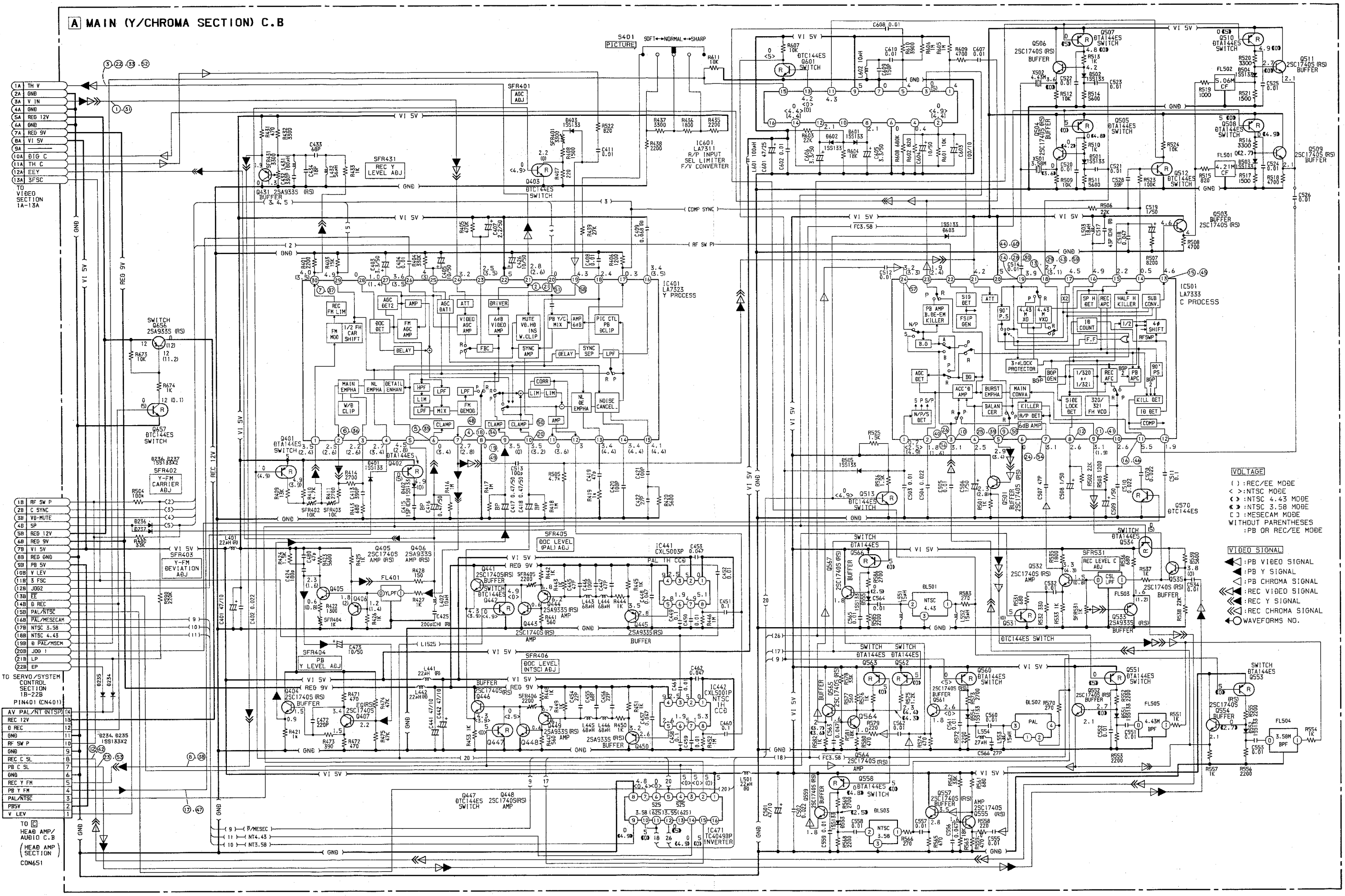
SYSTEM SWITCH MODE

※ When SYSTEM CONTROL IC has run away
SYSTEM CONTROL IC will not accept any mode.

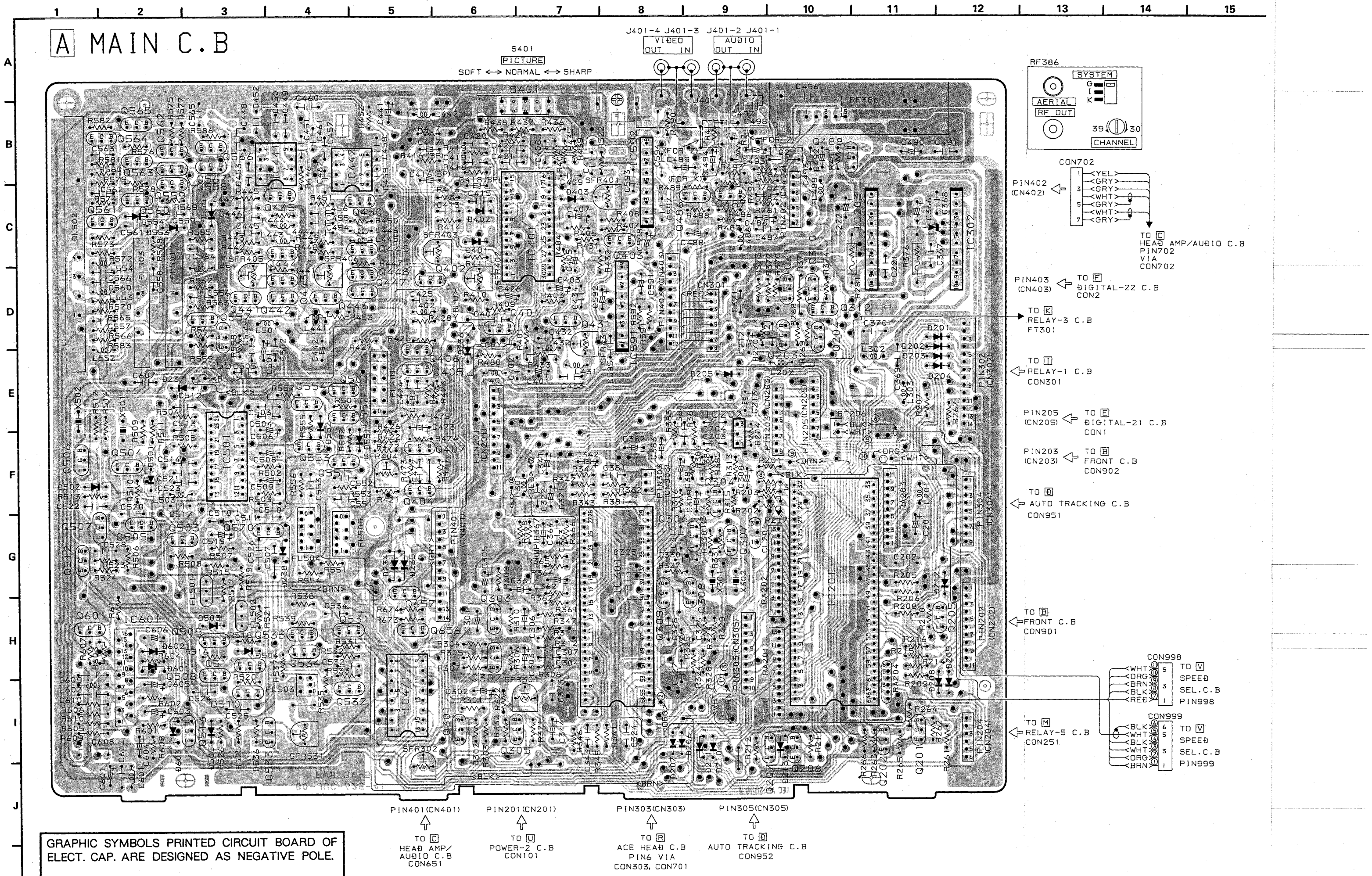

STRUCTURE OF SWITCHES
Pattern of conects
C COM.
SW ①
SW ②
SW ③
SW ④
Slide of conect piece
SWITCH STATE DIAGRAM
SW ①
SW ②
SW ③
SW ④
0 0 0 1 1 1 1 1 1 0 0 0
0 0 1 1 1 0 0 1 1 1 1 0
1 0 0 0 0 0 1 1 1 1 1 1
1 1 1 1 0 0 0 0 1 1 0 0
OPERATION POSITIONS
REVERSE
FORWARD
PINCH OFF
STOP
FF/REW
EJECT
SHIFT OPERATION
REVERSE LOADING
TAPE LOADING
F/R LOADING
REVERSE UNLOADING
TAPE UNLOADING
F/R UNLOADING

SWITCH				Position
SW1	SW2	SW3	SW4	
0	0	1	0	Front loading, Eject
0	1	1	0	Intermediate
0	1	1	1	F.F, REW
1	1	1	1	Intermediate
1	1	1	0	Stop
1	0	1	0	Tape loading
1	0	0	0	Gear change
1	1	0	0	Intermediate
1	1	0	1	Play (Pause)
0	1	0	1	Intermediate
0	0	0	1	Intermediate
0	0	1	1	Reset

SCHEMATIC DIAGRAM – 1 (VIDEO SECTION)


A MAIN (Y/CHROMA SECTION) C.B
TO VIDEO SECTION 1A-13A
1A TH V
2A GND
3A V IN
4A GND
5A REG 12V
6A GND
7A REG 9V
8A VI 5V
10A DIG C
11A TH C
12A EEY
13A 3FSC
S401 PICTURE
SOFT NORMAL SHARP
SFR401 AGC ADJ
SFR431 REC Y LEVEL ADJ
Q431 2SA933S (RS) BUFFER
Q403 DTC144ES SWITCH
IC601 LA7311 R/P INPUT SEL LIMITER F/V CONVERTER
Q601 DTC144ES SWITCH
IC401 LA7323 Y PROCESS
REC FM LIM
FM MOD
1/2 FH CAR SHIFT
AGC DET2
DOC DET
AMP
FM AGC AMP
AGC DAT1
ATT
VIDEO AGC AMP
DRIVER
6dB VIDEO AMP
MUTE V0.H0 INS W.CLIP
PB Y/C MIX
AMP 6dB
PIC CTL PB DCLIP
DELAY
FBC
SYNC AMP
SYNC SEP
LPF
MAIN EMPHA
NL EMPHA
DETAIL ENHAN
W/D CLIP
HPF
LIM
LPF
MIX
FM DEMOD
CORR
NL DE EMPHA
NOISE CANCEL
CLAMP
SWITCH Q656 2SA933S (RS)
Q657 DTC144ES SWITCH
Q401 DTA144ES SWITCH
Q402 DTA144ES
SFR402 Y-FM CARRIER ADJ
SFR403 Y-FM DEVIATION ADJ
Q405 2SC1740S AMP (RS)
Q406 2SA933S AMP (RS)
FL401
SFR405 DOC LEVEL (PAL) ADJ
Q441 2SC1740S (RS) BUFFER
Q442 DTC144ES SWITCH
Q443 2SC1740S (RS) AMP
Q444 2SA933S (RS) AMP
Q445 2SA933S (RS) BUFFER
IC441 CXL5003P PAL 1H CCD
SFR404 PB Y LEVEL ADJ
SFR406 DOC LEVEL (NTSC) ADJ
Q404 2SC1740S (RS) BUFFER
Q407 2SC1740S EQ (RS)
Q446 2SC1740S (RS) BUFFER
Q447 DTC144ES SWITCH
Q448 2SC1740S (RS) AMP
Q449 2SA933S (RS) AMP
Q450 2SA933S (RS) BUFFER
IC442 CXL5001P NTSC 1H CCD
IC471 TC4049BP INVERTER
1B RF SW P
2B C SYNC
3B V0-MUTE
4B SP
5B REG 12V
6B REG 9V
7B VI 5V
8B REG GND
9B PB 5V
10B Y LEV
11B 3 FSC
12B JOG2
13B EE
14B D REC
15B PAL/NTSC
16B PAL/MESECAM
17B NTSC 3.58
18B NTSC 4.43
19B D PAL/MSCM
20B JOG 1
21B LP
22B EP
TO SERVO/SYSTEM CONTROL SECTION 1B-22B
PIN401 (CN401)
AV PAL/NT (NTSC)
REC 12V
D REC
GND
RF SW P
GND
REC C SL
PB C SL
GND
REC Y FM
PB Y FM
PAL/NTSC
PBSV
V LEV
TO C HEAD AMP/AUDIO C.B (HEAD AMP SECTION) CDN651
Q506 2SC1740S (RS) BUFFER
Q507 DTA144ES SWITCH
Q504 2SC1740S (RS) BUFFER
Q505 DTA144ES SWITCH
Q510 DTA144ES SWITCH
Q511 2SC1740S (RS) BUFFER
Q508 DTA144ES SWITCH
Q509 2SC1740S (RS) BUFFER
Q512 DTC144ES SWITCH
Q503 BUFFER 2SC1740S (RS)
IC501 LA7333 C PROCESS
SIG DET
ATT
FSIP GEN
PB AMP B.DE-EM KILLER
90° P.S
4.43 M XO
4.43 M VXO
X2
SP H DET
REC APC
HALF H KILLER
SUB CONV.
1/2
4φ SHIFT
1B COUNT
F.F
RFSWP
3φ LOCK PROTECTOR
AGC DET
BG
ACC'D AMP
BURST EMPHA
MAIN CONVA
BGP GEN
1/320 or 1/321
REC AFC
PB APC
90° PS
BALAN CER
KILLER
R/P DET
6dB AMP
SIDE LOCK DET
320/321 FH VCO
KILL DET
ID DET
COMP
N/P/S DET
Q513 DTC144ES SWITCH
Q501 BUFFER 2SC1740S (RS)
Q570 DTC144ES
Q534 DTA144ES SWITCH
Q566 DTA144ES SWITCH
Q567 2SC1740S (RS) BUFFER
DL501 NTSC 4.43
SFR531 REC LEVEL C ADJ
Q532 2SC1740S (RS) AMP
Q535 2SC1740S (RS) BUFFER
Q533 2SA933S (RS) BUFFER
Q531 DTC144ES SWITCH
FL503
Q563 DTA144ES SWITCH
Q562 DTA144ES SWITCH
Q565 2SC1740S (RS) BUFFER
Q564 2SC1740S (RS) AMP
Q560 DTA144ES SWITCH
Q561 2SC1740S (RS) BUFFER
DL502 PAL
Q551 DTA144ES SWITCH
Q552 2SC1740S (RS) BUFFER
FL505 4.43M BPF
Q553 DTA144ES SWITCH
Q554 2SC1740S (RS) BUFFER
FL504 3.58M BPF
Q558 DTA144ES SWITCH
Q559 2SC1740S (RS) BUFFER
DL503 NTSC 3.58
Q557 2SC1740S (RS) AMP
Q555 2SC1740S (RS) AMP
VOLTAGE
( ) :REC/EE MODE
< >:NTSC MODE
« » :NTSC 4.43 MODE
« » :NTSC 3.58 MODE
[ ] :MESECAM MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE
VIDEO SIGNAL
:PB VIDEO SIGNAL
:PB Y SIGNAL
:PB CHROMA SIGNAL
:REC VIDEO SIGNAL
:REC Y SIGNAL
:REC CHROMA SIGNAL
WAVEFORMS NO.

WIRING – 1 (VIDEO/SERVO/SYSTEM CONTROL SECTION).

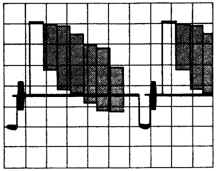

A MAIN C.B
S401
PICTURE
SOFT ⟷ NORMAL ⟷ SHARP
J401-4 J401-3 J401-2 J401-1
VIDEO OUT IN
AUDIO OUT IN
RF386
SYSTEM
G
I
K
AERIAL
RF OUT
39 30
CHANNEL
CON702
YEL
GRY
GRY
WHT
GRY
WHT
GRY
PIN402 (CN402)
TO C HEAD AMP/AUDIO C.B PIN702 VIA CON702
PIN403 (CN403)
TO F DIGITAL-22 C.B CON2
TO K RELAY-3 C.B FT301
TO I RELAY-1 C.B CON301
PIN205 (CN205)
TO E DIGITAL-21 C.B CON1
PIN203 (CN203)
TO B FRONT C.B CON902
TO D AUTO TRACKING C.B CON951
TO B FRONT C.B CON901
CON998
WHT
ORG
BRN
BLK
RED
TO V SPEED SEL.C.B PIN998
TO M RELAY-5 C.B CON251
CON999
BLK
WHT
BLK
WHT
ORG
BRN
TO V SPEED SEL.C.B PIN999
PIN401(CN401)
TO C HEAD AMP/AUDIO C.B CON651
PIN201(CN201)
TO U POWER-2 C.B CON101
PIN303(CN303)
TO R ACE HEAD C.B PIN6 VIA CON303, CON701
PIN305(CN305)
TO D AUTO TRACKING C.B CON952
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

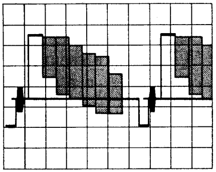
(プリント基板内のケミコンの極性表示はθ表示です。)

WAVEFORM – 1 (VIDEO SECTION)

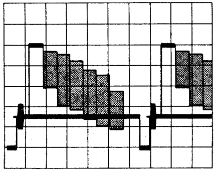
LINE IN (EE, PAL)
200mV/div.
10µs/div.

①


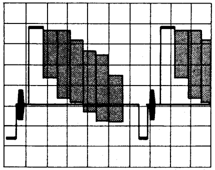
IC401 Pin ㉑ (EE, PAL)
500mV/div.
10µs/div.

②


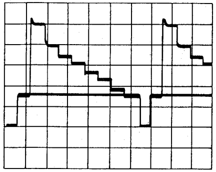
LINE OUT (EE, PAL)
200mV/div.
10µs/div.

③


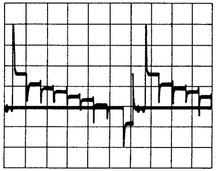
IC401 Pin ⑦ (EE, PAL)
200mV/div.
10µs/div.

④


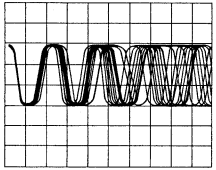
IC401 Pin ⑥ (EE, PAL)
100mV/div.
10µs/div.

⑤


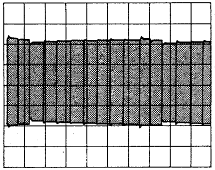
IC401 Pin ② (EE, PAL)
200mV/div.
10µs/div.

⑥


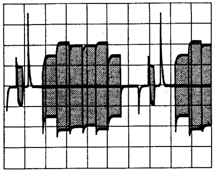
IC401 Pin ㉚ (EE,PAL)
500mV/div.
100ns/div.

⑦


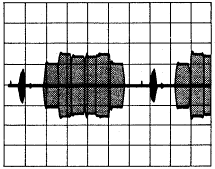
CN401 Pin ⑤ (EE, PAL)
100mV/div.
10µs/div.

⑧


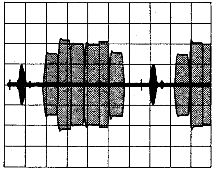
IC501 Pin ⑤ (EE, PAL)
100mV/div.
10µs/div.

⑨


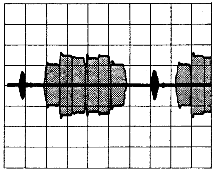
IC501 Pin ③ (EE, PAL)
50mV/div.
10µs/div.

⑩


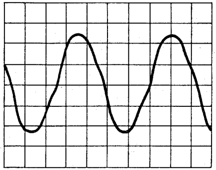
IC501 Pin ⑨ (EE, PAL)
200mV/div.
10µs/div.

⑪


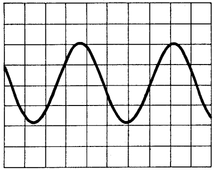
CN401 Pin ⑧ (EE, PAL)
50mV/div.
10µs/div.

⑫


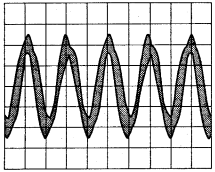
IC501 Pin ⑱ (EE, PAL)
200mV/div.
50ns/div.

⑬


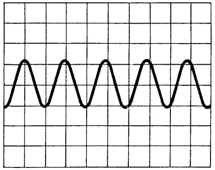
IC501 Pin ⑲ (EE, PAL)
200mV/div.
50ns/div.

⑭


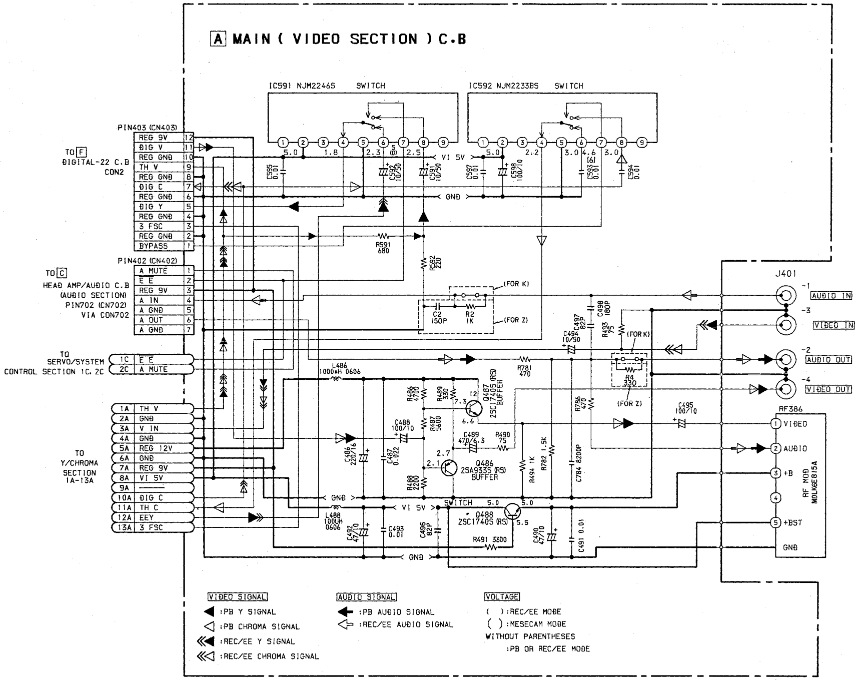
IC501 Pin ⑬ (EE, PAL)
50mV/div.
100ns/div.

⑮


IC501 Pin ⑪ (EE, PAL)
50mV/div.
100ns/div.

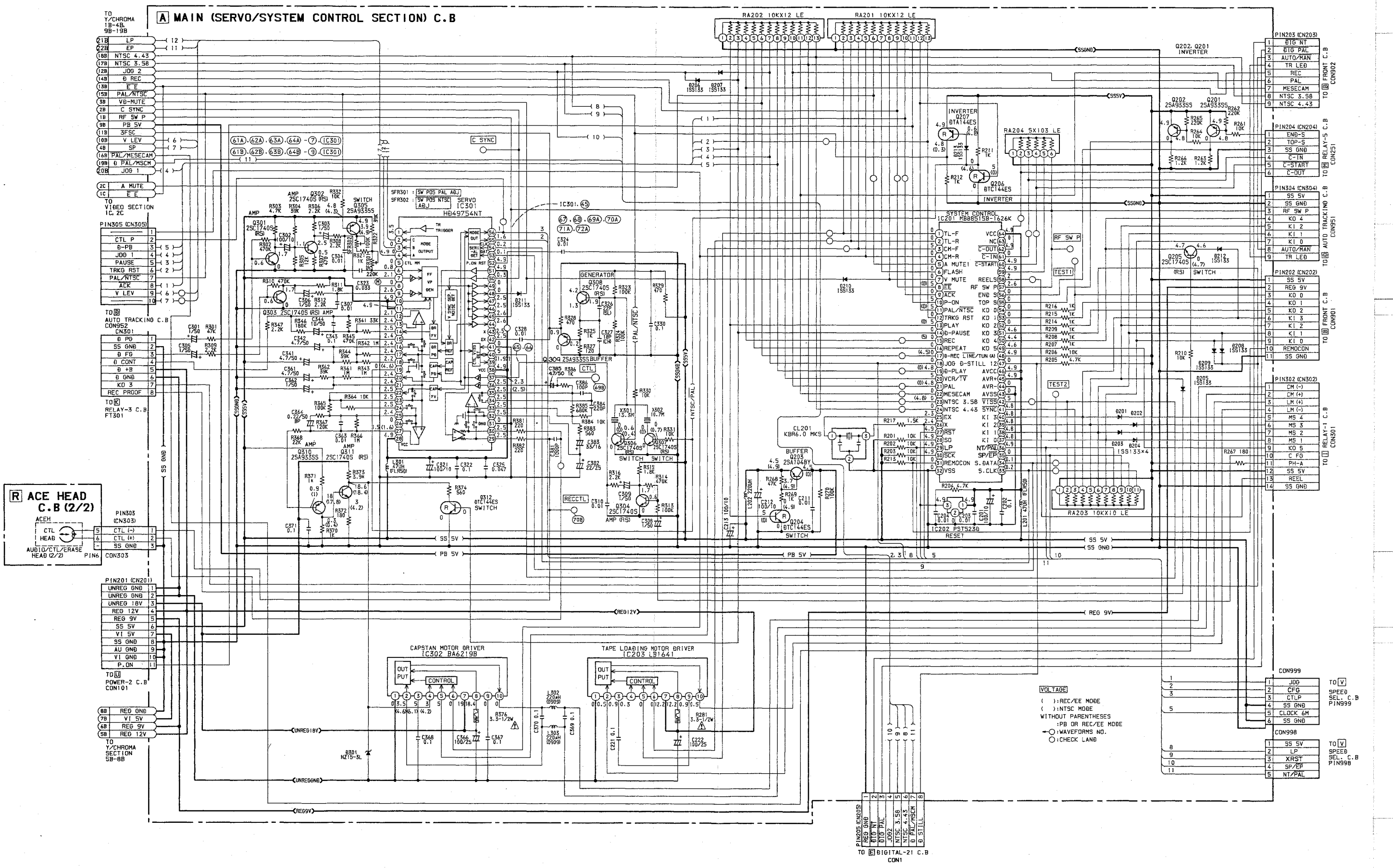
⑯


SCHEMATIC DIAGRAM – 2 (VIDEO SECTION)



A MAIN (VIDEO SECTION) C.B
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
PIN403 (CN403)
TO F DIGITAL-22 C.B CON2
REG 9V
DIG V
REG GND
TH V
REG GND
DIG C
REG GND
DIG Y
REG GND
3 FSC
REG GND
BYPASS
PIN402 (CN402)
TO C HEAD AMP/AUDIO C.B (AUDIO SECTION) PIN702 (CN702) VIA CON702
A MUTE
E E
REG 9V
A IN
A GND
A OUT
A GND
TO SERVO/SYSTEM CONTROL SECTION 1C, 2C
1C E E
2C A MUTE
TO Y/CHROMA SECTION 1A-13A
1A TH V
2A GND
3A V IN
4A GND
5A REG 12V
6A GND
7A REG 9V
8A VI 5V
9A
10A DIG C
11A TH C
12A EEY
13A 3 FSC
VI 5V
GND
C595 0.01
C592 10/50
C591 10/50
C597 0.01
C598 100/10
C593 0.01
C594 0.01
R591 680
R592 220
(FOR K)
(FOR Z)
C2 150P
R2 1K
J401
-1 AUDIO IN
-3 VIDEO IN
-2 AUDIO OUT
-4 VIDEO OUT
C498 180P
C497 82P
C494 10/50
R493 75
R4 330
R781 470
R786 470
C495 100/10
L486 1000μH 0606
R486 4700
R489 330
Q487 2SC1740S (RS) BUFFER
C488 100/10
R487 5600
C489 470/6.3
R490 75
C486 220/16
C487 0.022
Q486 2SA933S (RS) BUFFER
R488 2200
R494 1K
R782 1.5K
C784 8200P
SWITCH
Q488 2SC1740S (RS)
L488 100UH 0606
C492 47/10
C493 0.01
C496 82P
R491 3300
C490 47/10
C491 0.01
RF386
VIDEO
AUDIO
+B
+BST
GND
RF MOD MDLK6E815A
VIDEO SIGNAL
:PB Y SIGNAL
:PB CHROMA SIGNAL
:REC/EE Y SIGNAL
:REC/EE CHROMA SIGNAL
AUDIO SIGNAL
:PB AUDIO SIGNAL
:REC/EE AUDIO SIGNAL
VOLTAGE
( ) :REC/EE MODE
( ) :MESECAM MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE

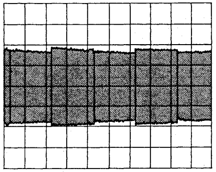
SCHEMATIC DIAGRAM – 3 (SERVO/SYSTEM CONTROL SECTION)


A MAIN (SERVO/SYSTEM CONTROL SECTION) C.B
R ACE HEAD C.B (2/2)
TO Y/CHROMA 1B-4B, 9B-19B
TO VIDEO SECTION 1C, 2C
PIN305 (CN305)
TO D AUTO TRACKING C.B CON952
TO K RELAY-3 C.B FT301
PIN303 (CN303)
AUDIO/CTL/ERASE HEAD (2/2)
PIN201 (CN201)
TO U POWER-2 C.B CON101
TO Y/CHROMA SECTION 5B-8B
SERVO IC301 HD49754NT
SYSTEM CONTROL IC201 MB88515B-1626K
CAPSTAN MOTOR DRIVER IC302 BA6219B
TAPE LOADING MOTOR DRIVER IC203 LB1641
RA202 10K×12 LE
RA201 10K×12 LE
RA204 5X103 LE
RA203 10K×10 LE
GENERATOR
BUFFER
SWITCH
INVERTER
RESET IC202 PST523B
CL201 KBR6.0 MKS
PIN203 (CN203) TO B FRONT C.B CON902
PIN204 (CN204) TO H RELAY-5 C.B CON251
PIN304 (CN304) TO D AUTO TRACKING C.B CON951
PIN202 (CN202) TO B FRONT C.B CON901
PIN302 (CN302) TO I RELAY-1 C.B CON301
CON999 TO V SPEED SEL. C.B PIN999
CON998 TO V SPEED SEL. C.B PIN998
PIN205 (CN205) TO E DIGITAL-21 C.B CON1
VOLTAGE
( ):REC/EE MODE
( ):NTSC MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE
:WAVEFORMS NO.
:CHECK LAND

WAVE FORM – 2 (VIDEO SECTION)

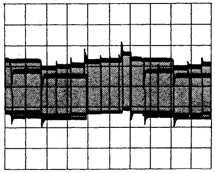
CN401 Pin ④ (PB, PAL)
100mV/div.
50ms/div.

⑰



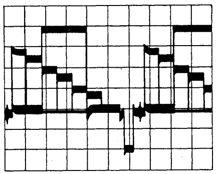
IC401 Pin ⑦ (PB, PAL)
500mV/div.
10μs/div.

⑱



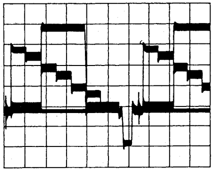
IC401 Pin ⑨ (PB, NTSC)
100mV/div.
10μs/div.

⑲



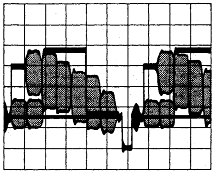
IC401 Pin ⑩ (PB, PAL)
100mV/div.
10μs/div.

⑳



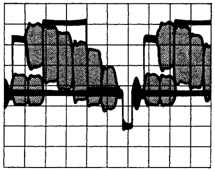
IC401 Pin ㉑ (PB, PAL)
500mV/div.
10μs/div.

㉑



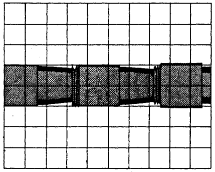
LINE OUT (PB, PAL)
200mV/div.
10μs/div.

㉒



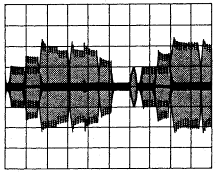
CN401 Pin ⑦ (PB, PAL)
100mV/div.
5ms/div.

㉓



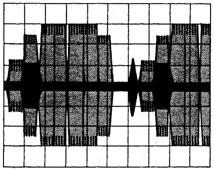
IC501 Pin ⑦ (PB, PAL)
50mV/div.
10μs/div.

㉔



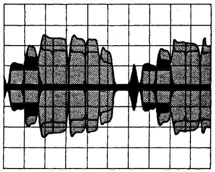
IC501 Pin ⑤ (PB, PAL)
200mV/div.
10μs/div.

㉕



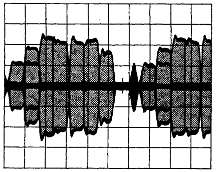
IC501 Pin ③ (PB, PAL)
50mV/div.
10μs/div.

㉖



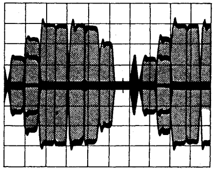
IC501 Pin ㉔ (PB, PAL)
50mV/div.
10μs/div.

㉗



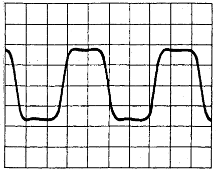
IC401 Pin ⑲ (PB, PAL)
50mV/div.
10μs/div.

㉘



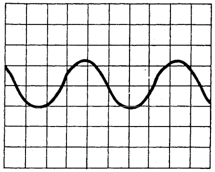
IC501 Pin ⑱ (PB, PAL)
200mV/div.
50ns/div.

㉙



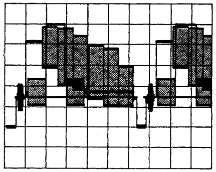
IC501 Pin ⑲ (PB, PAL)
200mV/div.
50ns/div.

㉚



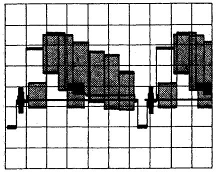
LINE IN (EE, NTSC)
200mV/div.
10μs/div.

㉛



IC401 Pin ㉑ (EE, NTSC)
500mV/div.
10μs/div.

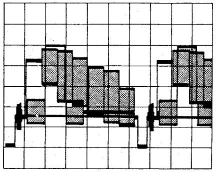
㉜



WAVE FORM – 3 (VIDEO SECTION)

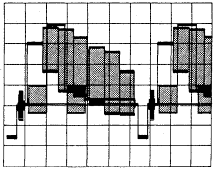
LINE OUT (EE, NTSC)
200mV/div.
10μs/div.

㉝



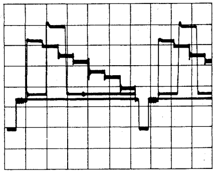
IC401 Pin ⑦ (EE, NTSC)
200mV/div.
10μs/div.

㉞



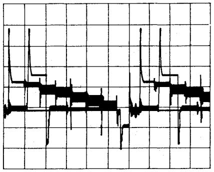
IC401 Pin ⑥ (EE, NTSC)
100mV/div.
10μs/div.

㉟



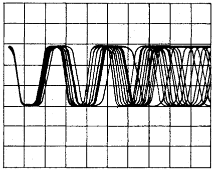
IC401 Pin ② (EE, NTSC)
200mV/div.
10μs/div.

㊱



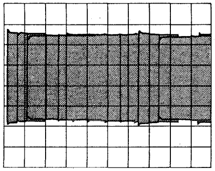
IC401 Pin ㉚ (EE, NTSC)
500mV/div.
100ns/div.

㊲



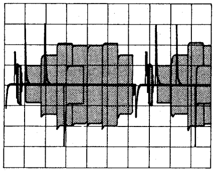
CN401 Pin ⑤ (EE,NTSC)
100mV/div.
10μs/div.

㊳



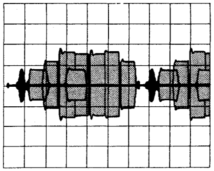
IC501 Pin ⑤ (EE, NTSC)
100mV/div.
10μs/div.

㊴



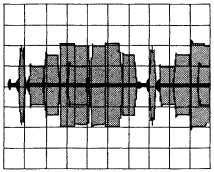
IC501 Pin ③ (EE, NTSC)
50mV/div.
10μs/div.

㊵



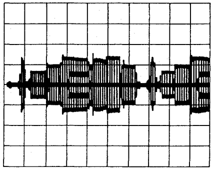
IC501 Pin ⑨ (EE, NTSC)
200mV/div.
10μs/div.

㊶



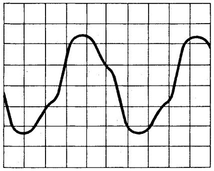
CN401 Pin ⑧ (EE, NTSC)
50mV/div.
100μs/div.

㊷



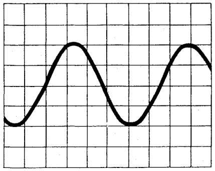
IC501 Pin ⑱ (EE, NTSC)
200mV/div.
50ns/div.

㊸



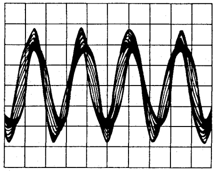
IC501 Pin ⑲ (EE, NTSC)
200mV/div.
50ns/div.

㊹



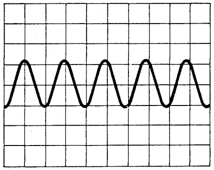
IC501 Pin ⑬ (EE, NTSC)
50mV/div.
100ns/div.

㊺



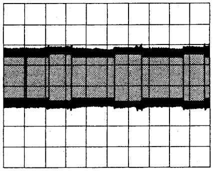
IC501 Pin ⑪ (EE, NTSC)
50mV/div.
100ns/div.

㊻



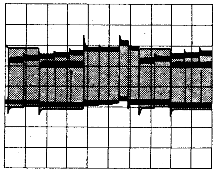
CN401 Pin ④ (PB,NTSC)
100mV/div.
5ms/div.

㊼



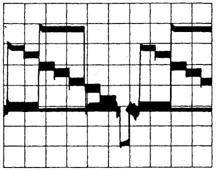
IC401 Pin ⑦ (PB, NTSC)
500mV/div.
10μs/div.

㊽



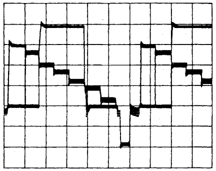
IC401 Pin ⑨ (PB, NTSC)
100mV/div.
10μs/div.

㊾



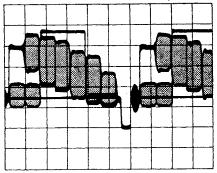
IC401 Pin ⑩ (PB,NTSC)
100mV/div.
10μs/div.

㊿



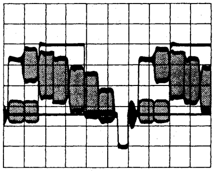
IC401 Pin ㉑ (PB, NTSC)
500mV/div.
10μs/div.

(51)



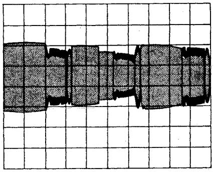
LINE OUT (PB, NTSC)
200mV/div.
10μs/div.

(52)



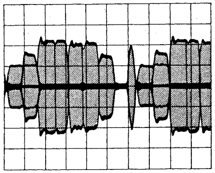
CN401 Pin ⑦ (PB, NTSC)
100mV/div.
5ms/div.

(53)



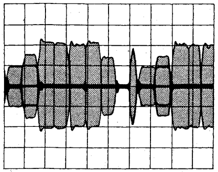
IC501 Pin ⑦ (PB, NTSC)
50mV/div.
10μs/div.

(54)



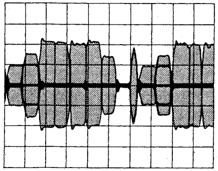
IC501 Pin ⑤ (PB, NTSC)
200mV/div.
10μs/div.

(55)



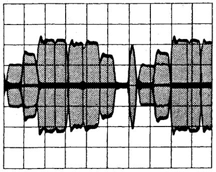
IC501 Pin ③ (PB, NTSC)
50mV/div.
10μs/div.

(56)



IC501 Pin ㉔ (PB, NTSC)
50mV/div.
10μs/div.

(57)



IC

(58)

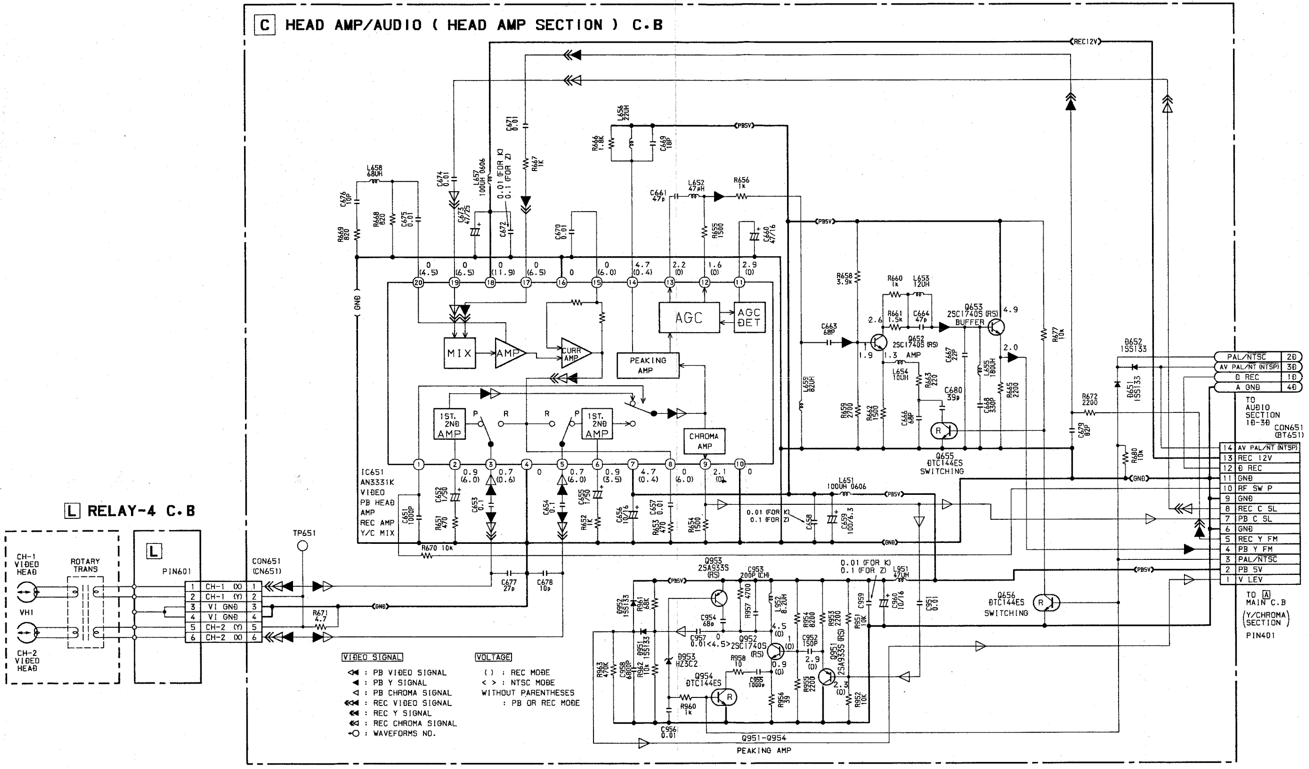
IC5
2
5

(59)

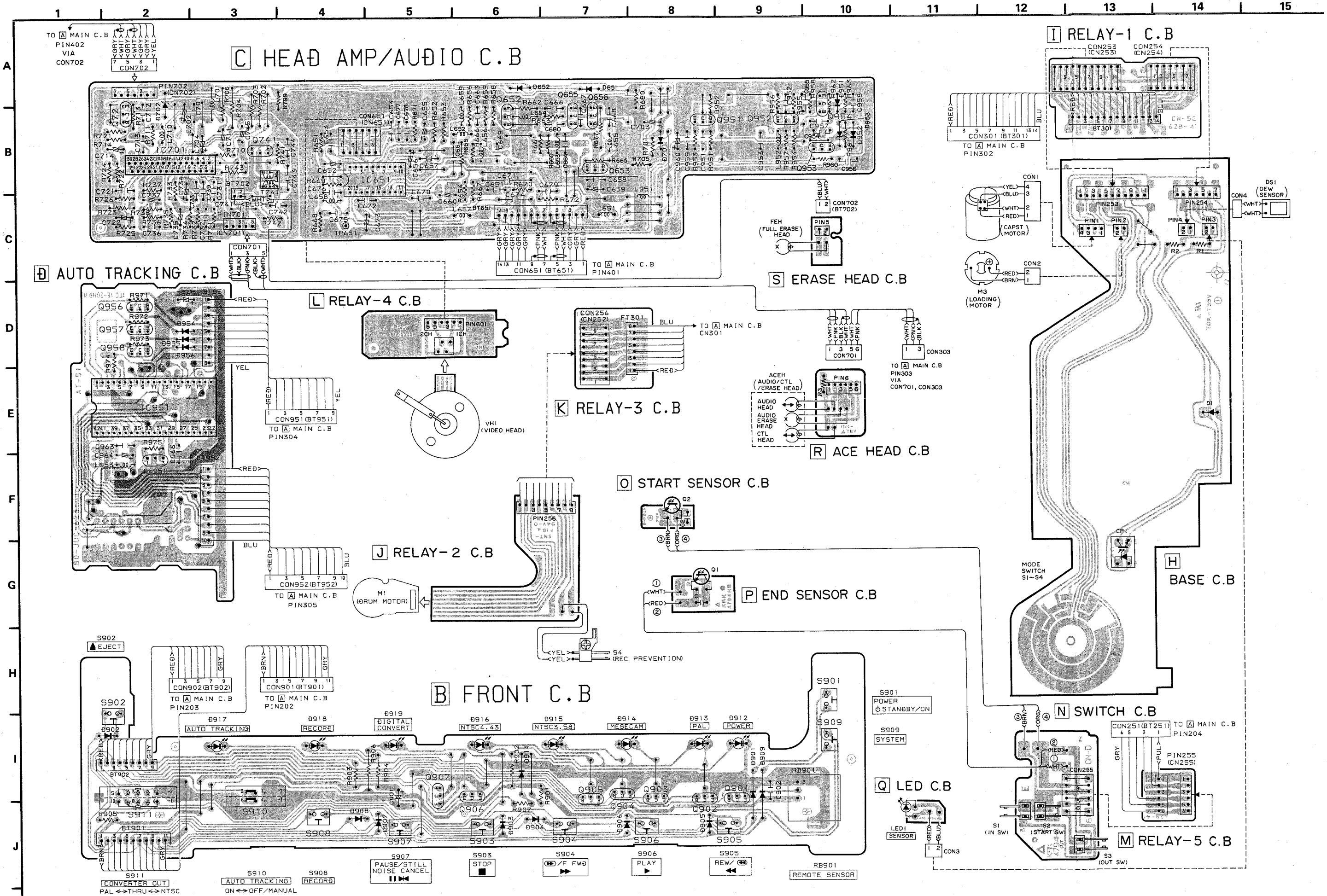
IC5
2
5

(60)

SCHEMATIC DIAGRAM – 4 (HEAD AMP. SECTION)


C HEAD AMP/AUDIO (HEAD AMP SECTION) C.B
L RELAY-4 C.B
CH-1 VIDEO HEAD
ROTARY TRANS
VH1
CH-2 VIDEO HEAD
PIN601
CON651 (CN651)
1 CH-1 (X) 1
2 CH-1 (Y) 2
3 VI GND 3
4 VI GND 4
5 CH-2 (Y) 5
6 CH-2 (X) 6
TP651
R671 4.7
R670 10k
C677 27p
C678 10p
IC651 AN3331K VIDEO PB HEAD AMP REC AMP Y/C MIX
MIX
AMP
CURR AMP
AGC
AGC DET
PEAKING AMP
CHROMA AMP
1ST. 2ND AMP
P
R
L658 68UH
C676 10P
R669 820
R668 820
C675 0.01
C674 0.01
C673 47/25
L657 100UH 0606
0.01 (FOR K) 0.1 (FOR Z)
C672
C671 0.01
R667 1K
C670 0.01
L656 22UH
R666 1.8K
C669 18P
C661 47p
L652 47μH
R656 1k
R655 1500
C660 47/16
C651 1000P
R651 470
C652 1/50
C653 0.1
C654 0.1
R652 1K
C655 1/50
C656 10/16
C657 0.01
R653 470
R654 1500
0.01 (FOR K) 0.1 (FOR Z)
C658
C659 100/6.3
L651 100UH 0606
(PB5V)
(GND)
(REC12V)
R658 3.9k
R660 1k
L653 12UH
R661 1.5k
C664 47p
C663 68P
Q652 2SC1740S (RS) AMP
Q653 2SC1740S (RS) BUFFER
L659 82UH
R659 2700
R662 1500
L654 10UH
R663 220
C666 68P
C667 22P
C680 39p
L655 180UH
C668 330P
R665 2200
R677 10k
Q655 DTC144ES SWITCHING
Q652 1SS133
D651 1SS133
R672 2200
C679 82P
R680 10k
PAL/NTSC 2D
AV PAL/NT (NTSP) 3D
D REC 1D
A GND 4D
TO AUDIO SECTION 1D-3D
CON651 (BT651)
14 AV PAL/NT (NTSP)
13 REC 12V
12 D REC
11 GND
10 RF SW P
9 GND
8 REC C SL
7 PB C SL
6 GND
5 REC Y FM
4 PB Y FM
3 PAL/NTSC
2 PB 5V
1 V LEV
TO A MAIN C.B (Y/CHROMA SECTION) PIN401
Q953 2SA933S (RS)
C953 200P (CH)
0.01 (FOR K) 0.1 (FOR Z)
L951 47UH
D952 1SS133
R961 68K
R957 4700
L952 8.2UH
R954 8200
R953 2200
R951 10K
C959
C960 10/16
C951 0.01
C954 68p
C957 0.01
Q952 2SC1740S (RS)
C952 150P
Q951 2SA933S (RS)
D951 1SS133
D953 HZ3C2
R958 10
C955 1000p
R963 470K
C958 6800P
R962 10k
Q954 DTC144ES
R960 1k
R956 39
R955 2200
R952 10K
C956 0.01
Q951-Q954 PEAKING AMP
Q656 DTC144ES SWITCHING
VIDEO SIGNAL
: PB VIDEO SIGNAL
: PB Y SIGNAL
: PB CHROMA SIGNAL
: REC VIDEO SIGNAL
: REC Y SIGNAL
: REC CHROMA SIGNAL
: WAVEFORMS NO.
VOLTAGE
( ) : REC MODE
< > : NTSC MODE
WITHOUT PARENTHESES : PB OR REC MODE

WIRING – 2 (HEAD AMP./AUDIO/AUTO TRACKING/FRONT/MECHANISM SECTION)

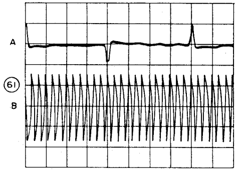

C HEAD AMP/AUDIO C.B
TO A MAIN C.B PIN402 VIA CON702
CON702
PIN702 (CN702)
IC701
IC651
CON651 (BT651)
TO A MAIN C.B PIN401
CON701
Đ AUTO TRACKING C.B
IC951
CON951 (BT951)
TO A MAIN C.B PIN304
CON952 (BT952)
TO A MAIN C.B PIN305
L RELAY-4 C.B
PIN601
VH1 (VIDEO HEAD)
K RELAY-3 C.B
CON256 (CN252)
FT301
TO A MAIN C.B CN301
J RELAY-2 C.B
PIN256
M1 (DRUM MOTOR)
S4 (REC PREVENTION)
I RELAY-1 C.B
CON253 (CN253)
CON254 (CN254)
BT301
CON301 (BT301)
TO A MAIN C.B PIN302
CON1
(CAPST MOTOR)
CON2
M3 (LOADING MOTOR)
CON4
DS1 (DEW SENSOR)
FEH (FULL ERASE HEAD)
S ERASE HEAD C.B
CON702 (BT702)
CON701
CON303
TO A MAIN C.B PIN303 VIA CON701, CON303
ACEH (AUDIO/CTL /ERASE HEAD)
AUDIO HEAD
AUDIO ERASE HEAD
CTL HEAD
R ACE HEAD C.B
PIN6
O START SENSOR C.B
Q2
P END SENSOR C.B
Q1
H BASE C.B
PIN253
PIN254
MODE SWITCH S1~S4
N SWITCH C.B
CON251 (BT251)
TO A MAIN C.B PIN204
PIN255 (CN255)
CON255
S1 (IN SW)
S2 (START SW)
S3 (OUT SW)
M RELAY-5 C.B
Q LED C.B
LED1 SENSOR
CON3
B FRONT C.B
S902 ▲EJECT
CON902 (BT902)
TO A MAIN C.B PIN203
CON901 (BT901)
TO A MAIN C.B PIN202
Đ917 AUTO TRACKING
Đ918 RECORĐ
Đ919 DIGITAL CONVERT
Đ916 NTSC4.43
Đ915 NTSC3.58
Đ914 MESECAM
Đ913 PAL
Đ912 POWER
S901 POWER ⏻STANDBY/ON
S909 SYSTEM
S911 CONVERTER OUT PAL ↔ THRU ↔ NTSC
S910 AUTO TRACKING ON ↔ OFF/MANUAL
S908 RECORĐ
S907 PAUSE/STILL NOISE CANCEL
S903 STOP
S904 ⏩/F FWĐ
S906 PLAY
S905 REW/ ⏪
RB901 REMOTE SENSOR

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

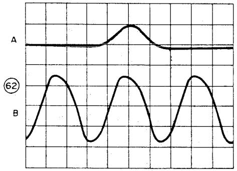
(プリント基板内のケミコンの極性表示は⊖表示です。)

WAVE FORM – 4 (SERVO SECTION)

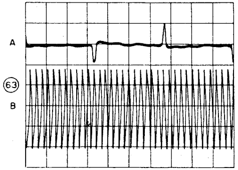
1. DRUM PG AND FG
Upper: DRUM PG AC 2V/div.
(IC301 Pin ⑦)
Lower: DRUM FG AC 500mV/div.
(IC301 Pin ⑨)
TIME 5ms/div.



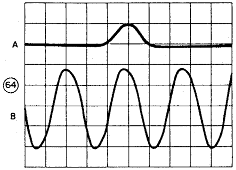
2. DRUM PG AND FG (PAL, MESECAM)
Upper: DRUM PG AC 2V/div.
(IC301 Pin ⑦)
Lower: DRUM FG AC 500mV/div.
(IC301 Pin ⑨)
TIME 500μs/div.
The PG pulse (upper) is generated (either positive or negative) when the FG pulse (lower)is a positive half wave.



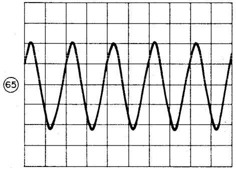
3. DRUM PG AND FG (NTSC 3.58, NTSC 4.43)
Upper: DRUM PG AC 2V/div.
(IC301 Pin ⑦)
Lower: DRUM FG AC 500mv/div.
(IC301 Pin ⑨)
Time 5ms/div.



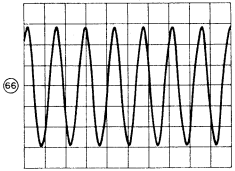
4. DRUM PG AND FG (NTSC 3.58, NTSC 4.43)
Upper: DRUM PG AC 2V/div.
(IC301 Pin ⑦)
Lower: DRUM FG AC 500mV/div.
(IC301 Pin ⑨)
Time 500μs/div.
The PG pulse (upper) is generated (either positive negative) when the FG pulse (lower) is a positive half wave.



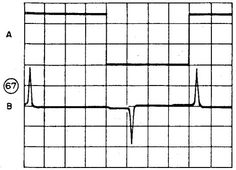
5. CAPSTAN FG (PAL, MESECAM)
(IC301 Pin ㊲)
AC 500mV/div.
1ms/div.



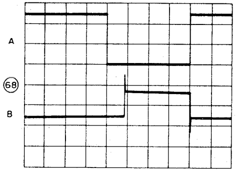
6. CAPSTAN FG (NTSC 3.58, NTSC 4.43)
(IC301 Pin ㊲)
AC 500mV/div.
1ms/div.



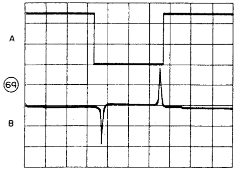
7. RF SWP AND PB CTL (PAL, MESECAM)
Upper: RF SWP DC 2V/div.
(IC301 Pin ㊺)
Lower: PB CTL AC 500mV/div.
(TP CTL)
Time 5ms/div.
(The PB CTL pulse is preset position.)



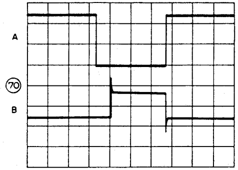
8. RF SWP AND REC CTL (PAL, MESECAM)
Upper: RF SWP DC 2V/div.
(IC301 Pin ㊺)
Lower: REC CTL AC 2V/div.
(TP REC CTL)
Time 5ms/div.



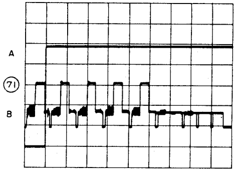
9. RF SWP AND PB CTL (NTSC 3.58, NTSC 4.43)
Upper: RF SWP DC 2V/div.
(IC301 Pin ㊺)
Lower: PB CTL AC 500mV/div.
(TP CTL)
Time 5ms/div.
(The PB CTL pulses preset position)



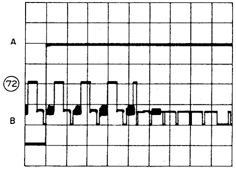
10. RF SWP AND REC CTL (NTSC 3.58, NTSC 4.43)
Upper: RF SWP DC 2V/div.
(IC301 Pin ㊺)
Lower: REC CTL AC 2V/div.
(TP REC CTL)
Time 5ms/div.



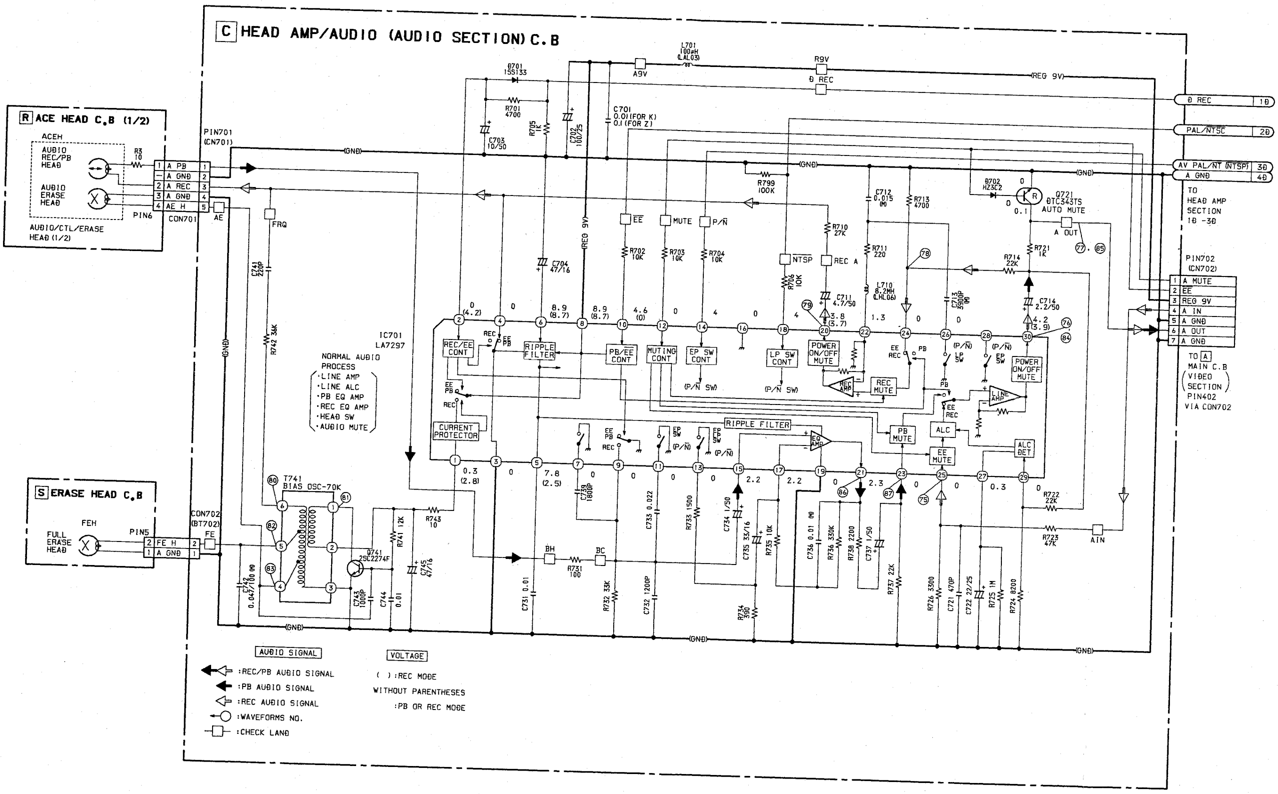
11. RF SWP AND VIDEO OUT (PAL, MESECAM)
Upper: RF SWP DC 1V/div.
(IC301 Pin ㊺)
Lower: VIDEO OUT (at open)
AC 1V/div.
Time 50μs/div.



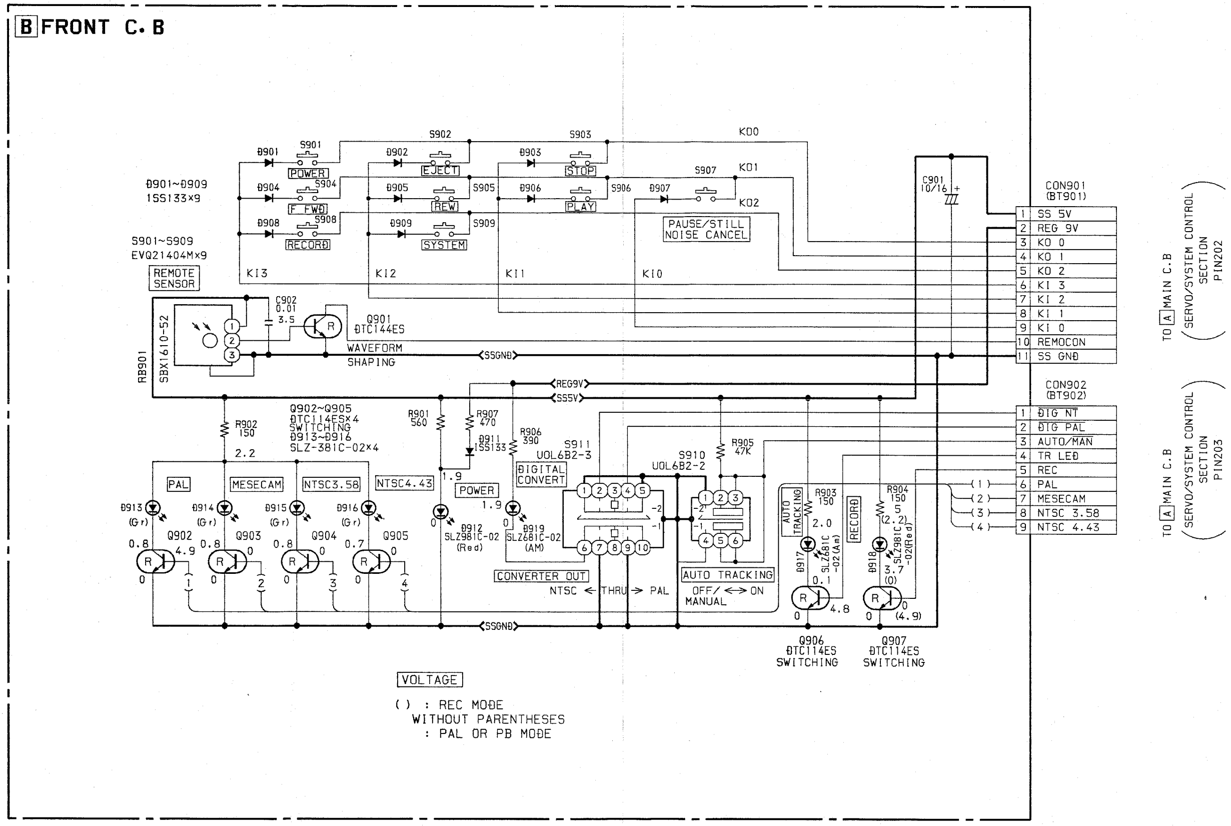
12. RF SWP AND VIDEO OUT (NTSC 3.58, NTSC 4.43)
Upper: RF SWP DC 1V/div.
(IC301 Pin ㊺)
Lower: VIDEO OUT (at open)
AC 1V/div.
Time 50μs/div.



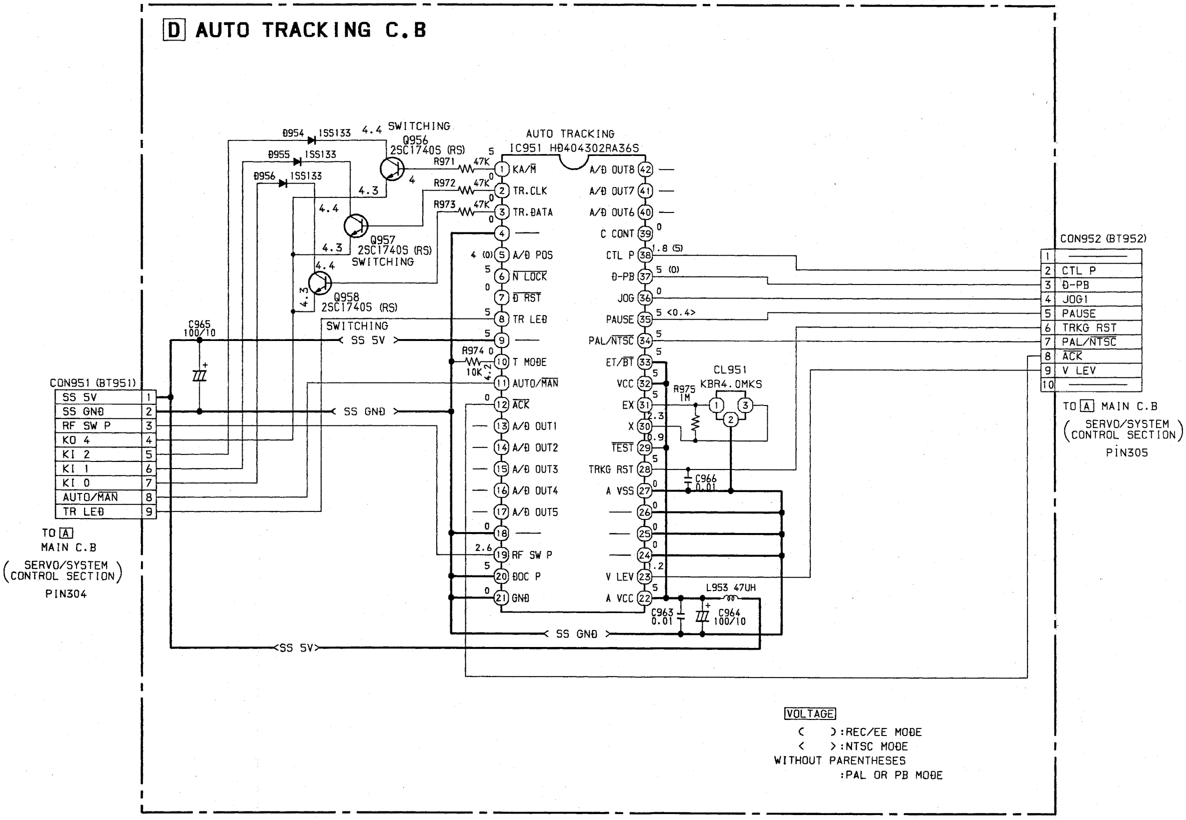
SCHEMATIC DIAGRAM – 5 (AUDIO SECTION)


C HEAD AMP/AUDIO (AUDIO SECTION) C.B
R ACE HEAD C.B (1/2)
ACEH
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
AUDIO/CTL/ERASE HEAD (1/2)
R3 10
PIN6
CON701
PIN701 (CN701)
1 A PB
— A GND
2 A REC
3 A GND
4 AE H
AE
FRQ
S ERASE HEAD C.B
FEH
FULL ERASE HEAD
PIN5
2 FE H
1 A GND
CON702 (BT702)
FE
D701 1SS133
R701 4700
C703 10/50
R705 1K
C702 100/25
C701 0.01(FOR K) 0.1(FOR Z)
A9V
L701 100μH (LAL03)
R9V
D REC
REG 9V
GND
R799 100K
C712 0.015 (M)
R713 4700
D702 HZ3C2
Q721 DTC343TS AUTO MUTE
A OUT
TO HEAD AMP SECTION 1D -3D
D REC 1D
PAL/NTSC 2D
AV PAL/NT (NTSP) 3D
A GND 4D
EE
MUTE
P/N
NTSP
REC A
R702 10K
R703 10K
R704 10K
R706 10K
R710 27K
R711 220
R714 22K
R721 1K
C704 47/16
C741 220P
R742 36K
L710 8.2MH (LHL06)
C711 4.7/50
C713 3900P (M)
C714 2.2/50
PIN702 (CN702)
1 A MUTE
2 EE
3 REG 9V
4 A IN
5 A GND
6 A OUT
7 A GND
TO A MAIN C.B (VIDEO SECTION) PIN402 VIA CON702
IC701 LA7297
NORMAL AUDIO PROCESS
·LINE AMP
·LINE ALC
·PB EQ AMP
·REC EQ AMP
·HEAD SW
·AUDIO MUTE
REC/EE CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
LP SW
EP SW
PB MUTE
ALC
EE MUTE
ALC DET
EQ AMP
CURRENT PROTECTOR
(P/N SW)
(P/N)
0 (4.2)
0
8.9 (8.7)
8.9 (8.7)
4.6 (0)
4
3.8 (3.7)
1.3
4.2 (3.9)
0.3 (2.8)
7.8 (2.5)
2.2
2.3
0.3
T741 BIAS OSC-70K
Q741 2SC2274F
R743 10
R741 12K
C745 47/16
C742 0.047/100 (M)
C743 1000P
C744 0.01
C731 0.01
C739 1800P
R731 100
BH
BC
R732 33K
C732 1200P
C733 0.022
R733 1500
C734 1/50
C735 33/16
R734 390
R735 10K
C736 0.01 (M)
R736 330K
R738 2200
C737 1/50
R737 22K
R726 3300
C721 470P
C722 22/25
R725 1M
R724 8200
R722 22K
R723 47K
AIN
(GND)
AUDIO SIGNAL
:REC/PB AUDIO SIGNAL
:PB AUDIO SIGNAL
:REC AUDIO SIGNAL
:WAVEFORMS NO.
:CHECK LAND
VOLTAGE
( ) :REC MODE
WITHOUT PARENTHESES :PB OR REC MODE

SCHEMATIC DIAGRAM – 6 (FRONT SECTION)

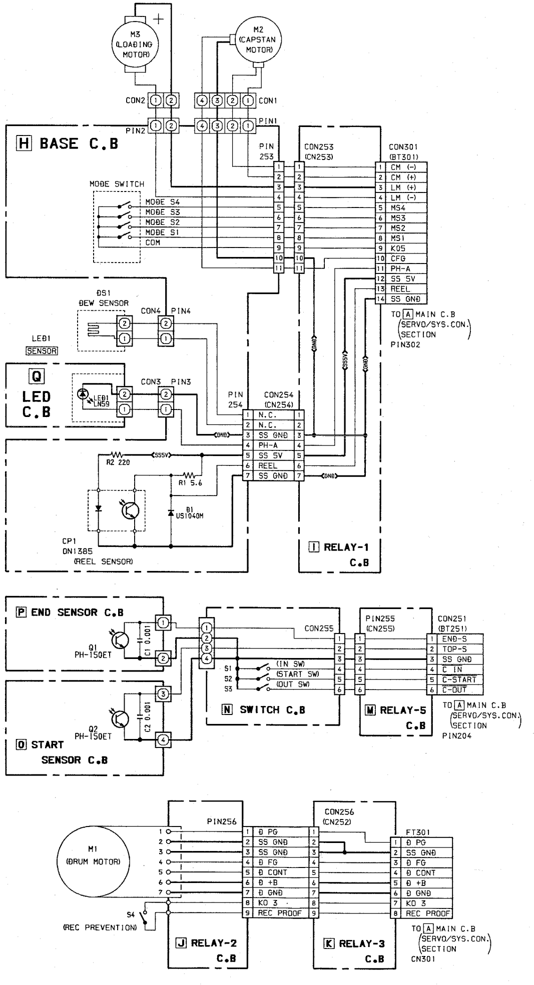

B FRONT C.B
Ð901~Ð909
1SS133×9
S901~S909
EVQ21404M×9
REMOTE SENSOR
RB901
SBX1610-52
C902
0.01
3.5
Q901
ÐTC144ES
WAVEFORM
SHAPING
Ð901
S901
POWER
Ð904
S904
F FWÐ
Ð908
S908
RECORÐ
Ð902
S902
EJECT
Ð905
S905
REW
Ð909
S909
SYSTEM
Ð903
S903
STOP
Ð906
S906
PLAY
Ð907
S907
PAUSE/STILL
NOISE CANCEL
KI3
KI2
KI1
KI0
KO0
KO1
KO2
C901
10/16
SSGNÐ
REG9V
SS5V
CON901
(BT901)
1 SS 5V
2 REG 9V
3 KO 0
4 KO 1
5 KO 2
6 KI 3
7 KI 2
8 KI 1
9 KI 0
10 REMOCON
11 SS GNÐ
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION PIN202)
CON902
(BT902)
1 ÐIG NT
2 ÐIG PAL
3 AUTO/MAN
4 TR LEÐ
5 REC
6 PAL
7 MESECAM
8 NTSC 3.58
9 NTSC 4.43
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION PIN203)
Q902~Q905
ÐTC114ES×4
SWITCHING
Ð913~Ð916
SLZ-381C-02×4
R902
150
2.2
PAL
MESECAM
NTSC3.58
NTSC4.43
Ð913
Ð914
Ð915
Ð916
(Gr)
Q902
Q903
Q904
Q905
0.8
4.9
0.7
R901
560
R907
470
Ð911
1SS133
1.9
POWER
Ð912
SLZ981C-02
(Red)
R906
390
Ð919
SLZ681C-02
(AM)
ÐIGITAL CONVERT
S911
UOL6B2-3
CONVERTER OUT
NTSC ← THRU → PAL
S910
UOL6B2-2
R905
47K
AUTO TRACKING
OFF/MANUAL ←→ ON
AUTO TRACKING
R903
150
2.0
Ð917
SLZ681C-02(Am)
0.1
4.8
RECORÐ
R904
150
(2.2)
Ð918
SLZ981C-02(Red)
3.7
(0)
(4.9)
Q906
ÐTC114ES
SWITCHING
Q907
ÐTC114ES
SWITCHING
VOLTAGE
( ) : REC MOÐE
WITHOUT PARENTHESES
: PAL OR PB MOÐE

SCHEMATIC DIAGRAM – 7 (AUTO TRACKING SECTION)



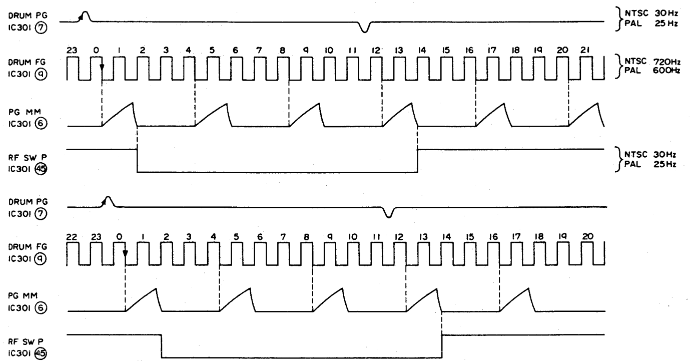
D AUTO TRACKING C.B
D954 1SS133
D955 1SS133
D956 1SS133
4.4 SWITCHING
Q956 2SC1740S (RS)
Q957 2SC1740S (RS) SWITCHING
Q958 2SC1740S (RS) SWITCHING
R971 47K
R972 47K
R973 47K
R974 10K
C965 100/10
AUTO TRACKING
IC951 HD404302RA36S
1 KA/M
2 TR.CLK
3 TR.DATA
4 —
5 A/D POS
6 N LOCK
7 D RST
8 TR LED
9 —
10 T MODE
11 AUTO/MAN
12 ACK
13 A/D OUT1
14 A/D OUT2
15 A/D OUT3
16 A/D OUT4
17 A/D OUT5
18 —
19 RF SW P
20 DOC P
21 GND
22 A VCC
23 V LEV
24 —
25 —
26 —
27 A VSS
28 TRKG RST
29 TEST
30 X
31 EX
32 VCC
33 ET/BT
34 PAL/NTSC
35 PAUSE
36 JOG
37 D-PB
38 CTL P
39 C CONT
40 A/D OUT6
41 A/D OUT7
42 A/D OUT8
CL951 KBR4.0MKS
R975 1M
C966 0.01
C963 0.01
C964 100/10
L953 47UH
SS 5V
SS GND
CON951 (BT951)
1 SS 5V
2 SS GND
3 RF SW P
4 KO 4
5 KI 2
6 KI 1
7 KI 0
8 AUTO/MAN
9 TR LED
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN304
CON952 (BT952)
1 —
2 CTL P
3 D-PB
4 JOG1
5 PAUSE
6 TRKG RST
7 PAL/NTSC
8 ACK
9 V LEV
10 —
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN305
VOLTAGE
( ) :REC/EE MODE
< > :NTSC MODE
WITHOUT PARENTHESES :PAL OR PB MODE

SCHEMATIC DIAGRAM – 8 (MECHANISM SECTION)

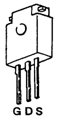


M3 (LOADING MOTOR)
M2 (CAPSTAN MOTOR)
CON2
CON1
PIN2
PIN1
H BASE C.B
PIN 253
CON253 (CN253)
CON301 (BT301)
1 CM (–)
2 CM (+)
3 LM (+)
4 LM (–)
5 MS4
6 MS3
7 MS2
8 MS1
9 K05
10 CFG
11 PH-A
12 SS 5V
13 REEL
14 SS GND
MODE SWITCH
MODE S4
MODE S3
MODE S2
MODE S1
COM
DS1
DEW SENSOR
CON4
PIN4
LED1 SENSOR
TO A MAIN C.B (SERVO/SYS.CON. SECTION) PIN302
Q LED C.B
LED1 LN59
CON3
PIN3
PIN 254
CON254 (CN254)
1 N.C.
2 N.C.
3 SS GND
4 PH-A
5 SS 5V
6 REEL
7 SS GND
R2 220
R1 5.6
D1 US1040M
CP1 ON1385 (REEL SENSOR)
I RELAY-1 C.B
P END SENSOR C.B
Q1 PH-150ET
C1 0.001
Q2 PH-150ET
C2 0.001
O START SENSOR C.B
CON255
S1 (IN SW)
S2 (START SW)
S3 (OUT SW)
N SWITCH C.B
PIN255 (CN255)
CON251 (BT251)
1 END-S
2 TOP-S
3 SS GND
4 C IN
5 C-START
6 C-OUT
M RELAY-5 C.B
TO A MAIN C.B (SERVO/SYS.CON. SECTION) PIN204
M1 (DRUM MOTOR)
PIN256
1 D PG
2 SS GND
3 SS GND
4 D FG
5 D CONT
6 D +B
7 D GND
8 KO 3
9 REC PROOF
CON256 (CN252)
FT301
1 D PG
2 SS GND
3 D FG
4 D CONT
5 D +B
6 D GND
7 KO 3
8 REC PROOF
S4 (REC PREVENTION)
J RELAY-2 C.B
K RELAY-3 C.B
TO A MAIN C.B (SERVO/SYS.CON. SECTION) CN301

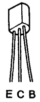
DRUM SERVO SYSTEM TIMING CHART



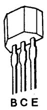
TRANSISTOR ILLUSTRATION



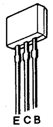
2SK903



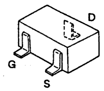
2SA933
2SC1740
2SC2274



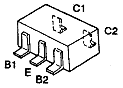
2SA1048



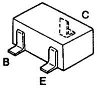
DTA144ES
DTC144ES
DTC114ES
DTC114TS



2SK621

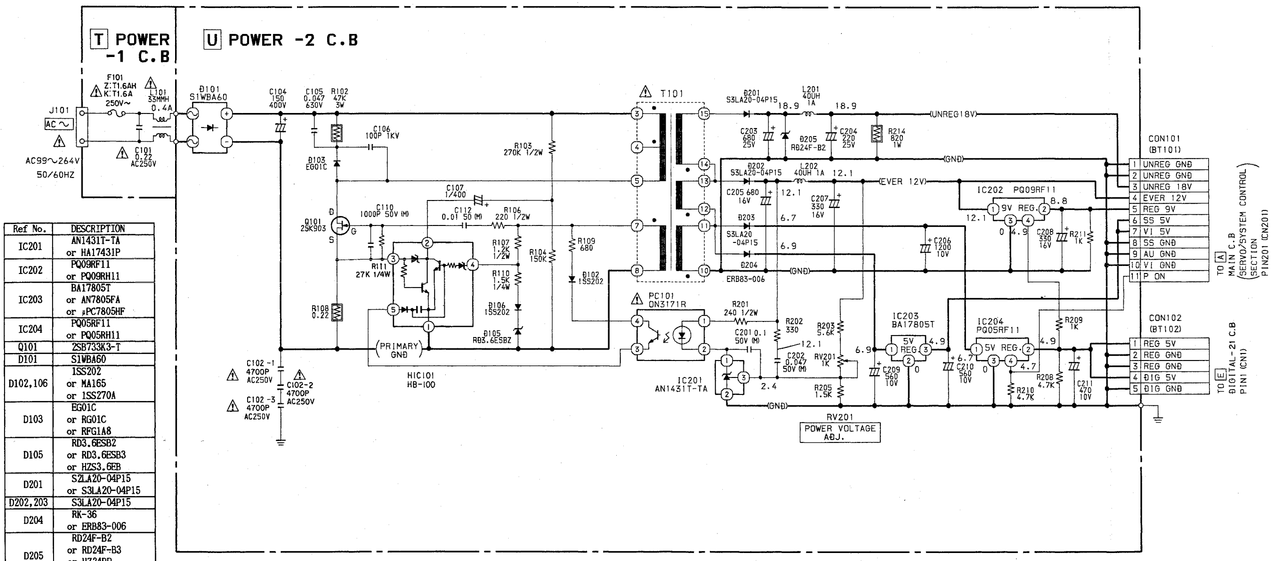


FMG2
FMA2
FMW1

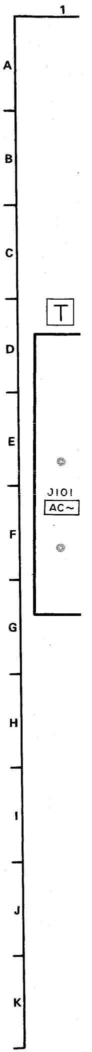


2SA1037
2SC2223
2SC2412
DTA144EK
DTC144EK

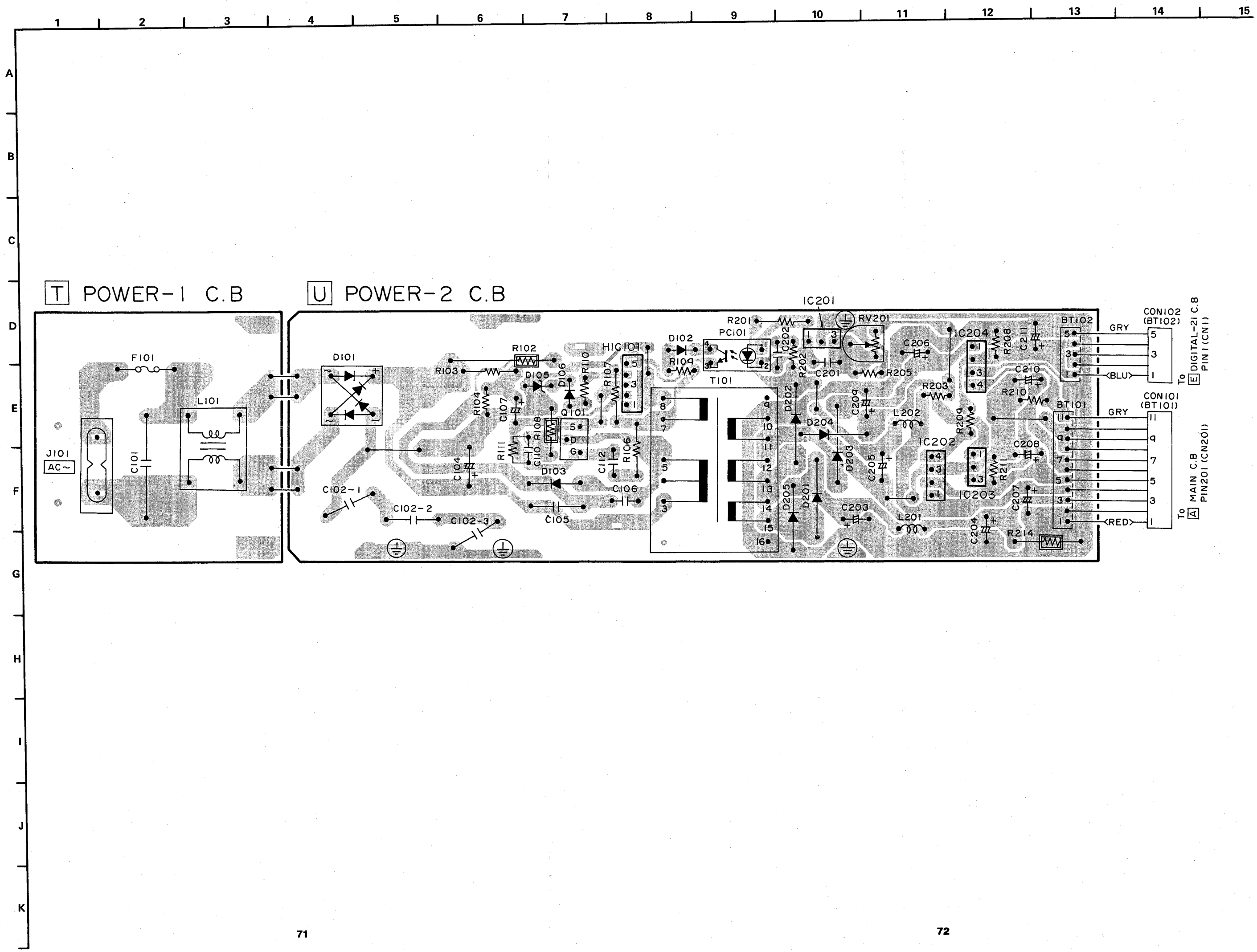
SCHEMATIC DIAGRAM – 9 (POWER UNIT SECTION)


T POWER -1 C.B
U POWER -2 C.B
J101
AC ~
AC99~264V
50/60HZ
F101
Z:T1.6AH
K:T1.6A
250V~
L101
33MMH
0.4A
C101
0.22
AC250V
Đ101
S1WBA60
C104
150
400V
C105
0.047
630V
R102
47K
3W
C106
100P 1KV
Đ103
EG01C
R103
270K 1/2W
C107
1/400
C110
1000P 50V (M)
C112
0.01 50 (M)
R106
220 1/2W
Q101
2SK903
D
G
S
R111
27K 1/4W
R107
1.2K
1/2W
R110
1.5K
1/4W
R104
150K
R109
680
Đ102
1SS202
Đ106
1SS202
Đ105
RĐ3.6ESBZ
R108
0.22
(PRIMARY GNĐ)
HIC101
HB-100
C102 -1
4700P
AC250V
C102-2
4700P
AC250V
C102 -3
4700P
AC250V
T101
Đ201
S3LA20-04P15
18.9
L201
40UH
1A
18.9
(UNREG18V)
C203
680
25V
Đ205
RĐ24F-B2
C204
220
25V
R214
820
1W
(GNĐ)
Đ202
S3LA20-04P15
L202
40UH 1A
12.1
(EVER 12V)
C205 680
16V
12.1
C207
330
16V
Đ203
S3LA20
-04P15
6.7
6.9
Đ204
ERB83-006
C206
1200
10V
IC202 PQ09RF11
9V REG.
8.8
12.1
0
4.9
C208
330
16V
R211
1K
CON101
(BT101)
1 UNREG GNĐ
2 UNREG GNĐ
3 UNREG 18V
4 EVER 12V
5 REG 9V
6 SS 5V
7 VI 5V
8 SS GNĐ
9 AU GNĐ
10 VI GNĐ
11 P ON
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION PIN201 (CN201)
PC101
ON3171R
R201
240 1/2W
C201 0.1
50V (M)
R202
330
12.1
C202
0.047
50V (M)
R203
5.6K
RV201
1K
R205
1.5K
IC201
AN1431T-TA
2.4
RV201
POWER VOLTAGE ADJ.
IC203
BA17805T
5V REG.
6.9
4.9
0
C209
560
10V
6.7
C210
560
10V
IC204
PQ05RF11
5V REG.
4.9
4.7
R209
1K
R208
4.7K
R210
4.7K
C211
470
10V
CON102
(BT102)
1 REG 5V
2 REG GNĐ
3 REG GNĐ
4 ĐIG 5V
5 ĐIG GNĐ
TO E ĐIGITAL-21 C.B PIN1 (CN1)

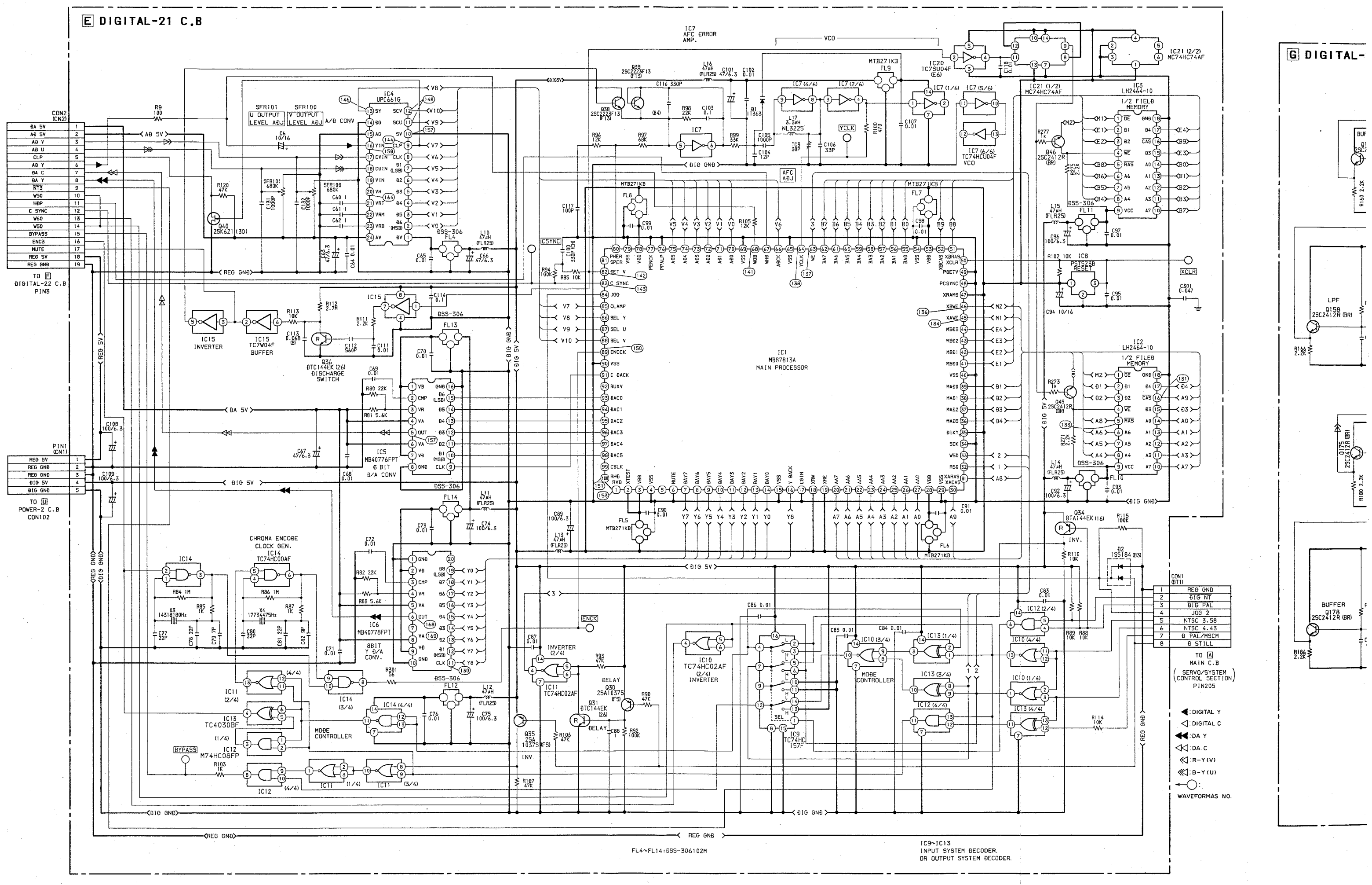
Ref No.	DESCRIPTION
IC201	AN1431T-TA or HA17431P
IC202	PQ09RF11 or PQ09RH11
IC203	BA17805T or AN7805FA or μPC7805HF
IC204	PQ05RF11 or PQ05RH11
Q101	2SB733K3-T
D101	S1WBA60
D102,106	1SS202 or MA165 or 1SS270A
D103	EG01C or RG01C or RFG1A8
D105	RD3.6ESB2 or RD3.6ESB3 or HZS3.6EB
D201	S2LA20-04P15 or S3LA20-04P15
D202,203	S3LA20-04P15
D204	RK-36 or ERB83-006
D205	RD24F-B2 or RD24F-B3 or HZ24BP or HZ24CP

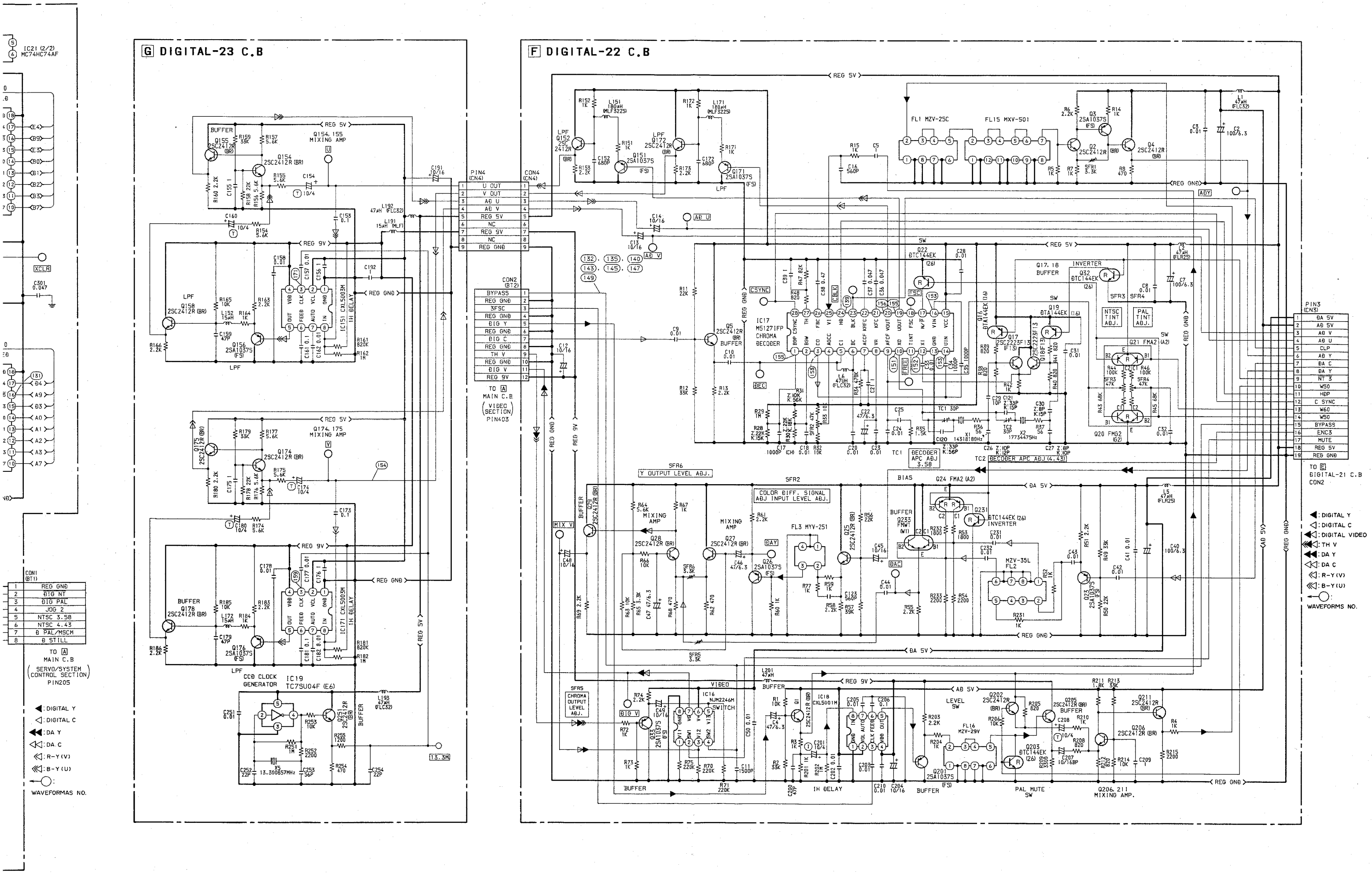

1
A
B
C
D
E
F
G
H
I
J
K
T
J101
AC~

SECTION
PIN201 (CN201)

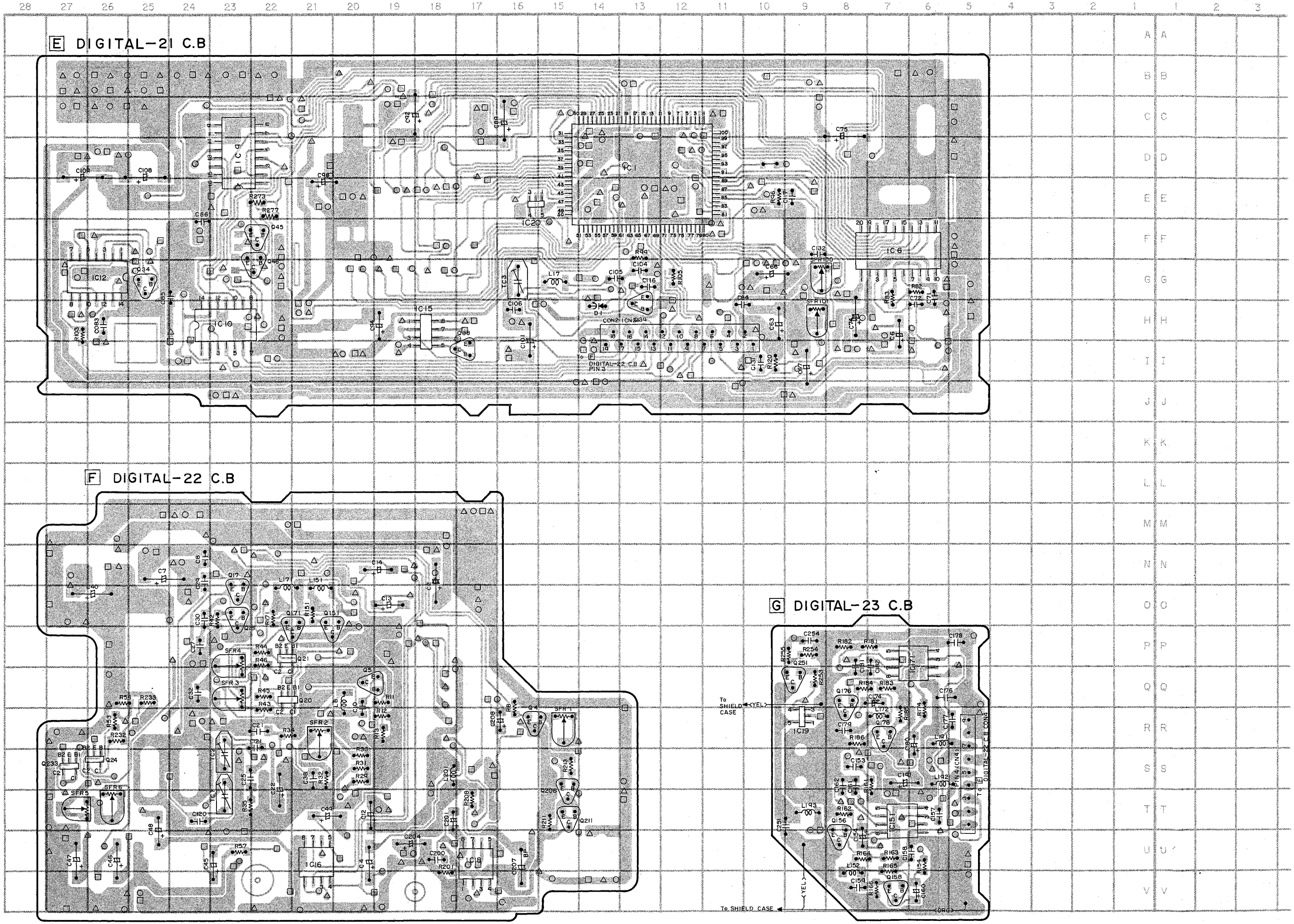

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
T POWER-1 C.B
U POWER-2 C.B
F101
L101
J101
AC~
C101
D101
R102
R103
R104
C107
D105
D106
R110
R107
HIC101
Q101
S
D
G
R108
R111
C110
D103
C104
C112
R106
C106
C105
C102-1
C102-2
C102-3
D102
R109
PC101
R201
IC201
C202
R202
C201
RV201
R205
C206
IC204
R208
C211
BT102
T101
D202
D204
D203
C204
L202
R203
R204
IC202
C205
D205
D201
C203
L201
C204
IC203
R211
R210
C210
C208
C207
R214
BT101
GRY
BLU
GRY
RED
CON102
(BT102)
CON101
(BT101)
To E DIGITAL-21 C.B PIN1(CN1)
To A MAIN C.B PIN201 (CN201)

SCHEMATIC DIAGRAM – 10 (DIGITAL SECTION)

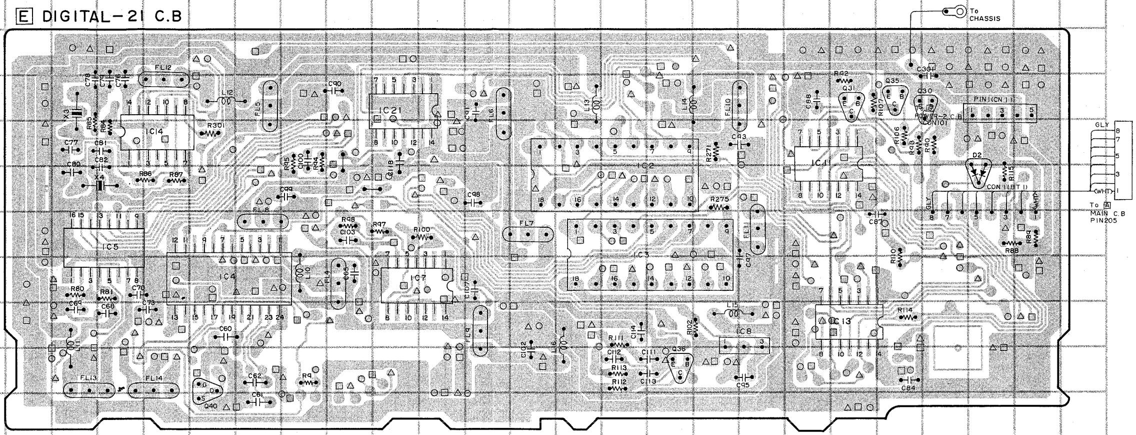

E DIGITAL-21 C.B
CON2 (CN2)
1 DA 5V
2 AD 5V
3 AD V
4 AD U
5 CLP
6 AD Y
7 DA C
8 DA Y
9 NT3
10 W50
11 HDP
12 C SYNC
13 W60
14 W50
15 BYPASS
16 ENC3
17 MUTE
18 REG 5V
19 REG GND
TO F DIGITAL-22 C.B PIN3
PIN1 (CN1)
1 REG 5V
2 REG GND
3 REG GND
4 DIG 5V
5 DIG GND
TO U POWER-2 C.B CON102
SFR101 U OUTPUT LEVEL ADJ
SFR100 V OUTPUT LEVEL ADJ
A/D CONV
IC4 UPC661G
IC15 INVERTER
IC15 TC7W04F BUFFER
Q36 DTC144EK (26) DISCHARGE SWITCH
IC5 MB40776FPT 6 BIT D/A CONV
IC6 MB40778FPT 8BIT Y D/A CONV.
CHROMA ENCODE CLOCK GEN. IC14 TC74HC00AF
IC13 TC4030BF
IC12 M74HC08FP
BYPASS
MODE CONTROLLER
IC7 AFC ERROR AMP.
VCO
IC20 TC7SU04F
IC21 (2/2) MC74HC74AF
IC21 (1/2) MC74HC74AF
IC7 (6/6) TC74HCU04F VCO
AFC ADJ
YCLK
IC3 LH2464-10 1/2 FIELD MEMORY
IC2 LH2464-10 1/2 FILED MEMORY
IC8 PST523D RESET
XCLR
CSYNC
IC1 MB87813A MAIN PROCESSOR
ENCK
IC11 TC74HC02AF INVERTER (2/4)
Q30 2SA1037S DELAY
Q31 DTC144EK DELAY
Q35 2SA1037S INV.
IC10 TC74HC02AF (2/4) INVERTER
IC9 TC74HC157F
MODE CONTROLLER
Q34 DTA144EK INV.
CON1 (BT1)
1 REG GND
2 DIG NT
3 DIG PAL
4 JOG 2
5 NTSC 3.58
6 NTSC 4.43
7 D PAL/MSCM
8 D STILL
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN205
◀:DIGITAL Y
◁:DIGITAL C
◀◀:DA Y
◁◁:DA C
R-Y (V)
B-Y (U)
WAVEFORMAS NO.
FL4~FL14:DSS-306102M
IC9~IC13 INPUT SYSTEM DECODER. OR OUTPUT SYSTEM DECODER.
G DIGITAL-
LPF
BUFFER


IC21 (2/2) MC74HC74AF
XCLR
G DIGITAL-23 C.B
F DIGITAL-22 C.B
REG 5V
REG 9V
REG GND
DA 5V
AD 5V
BUFFER
Q154, 155 MIXING AMP
Q174, 175 MIXING AMP
LPF
Q158 2SC2412R (BR)
Q178 2SC2412R (BR)
IC151 CXL5003M 1H DELAY
IC171 CXL5003M 1H DELAY
CCD CLOCK GENERATOR
IC19 TC7SU04F (E6)
X5 13.300857MHz
13.3M
PIN4 (CN4)
CON4 (CN4)
U OUT
V OUT
AD U
AD V
REG 5V
NC
REG 9V
REG GND
CON2 (BT2)
BYPASS
REG GND
3FSC
DIG Y
DIG C
TH V
DIG V
TO A MAIN C.B (VIDEO SECTION) PIN403
CON1 (BT1)
REG GND
DIG NT
DIG PAL
JOG 2
NTSC 3.58
NTSC 4.43
D PAL/MSCM
D STILL
TO A MAIN C.B (SERVO/SYSTEM CONTROL SECTION) PIN205
IC17 M51271FP CHROMA DECODER
Q5 2SC2412R (BR) BUFFER
FL1 MZV-25C
FL15 MXV-501
Q17, 18 BUFFER
INVERTER
NTSC TINT ADJ.
PAL TINT ADJ.
Q21 FMA2 (A2)
Q20 FMG2 (G2)
X1 14318180Hz
X2 17734475Hz
DECODER APC ADJ 3.58
TC2 DECODER APC ADJ (4.43)
SFR6 Y OUTPUT LEVEL ADJ.
COLOR DIFF. SIGNAL ADJ INPUT LEVEL ADJ.
FL3 MYV-251
Q24 FMA2 (A2)
MZV-35L FL2
SFR5 CHROMA OUTPUT LEVEL ADJ.
IC16 NJM2246M SWITCH
IC18 CXL5001M 1H DELAY
FL16 MZV-29V
LEVEL SW
PAL MUTE SW
Q206, 211 MIXING AMP.
PIN3 (CN3)
DA 5V
AD 5V
AD V
AD U
CLP
AD Y
DA C
DA Y
NT 3
W50
HDP
C SYNC
W60
BYPASS
ENC3
MUTE
REG 5V
REG GND
TO E DIGITAL-21 C.B CON2
◀: DIGITAL Y
◁: DIGITAL C
◀◀: DIGITAL VIDEO
◀◀: TH V
◀◀: DA Y
◁◁: DA C
◁◁: R-Y (V)
◁◁: B-Y (U)
○: WAVEFORMS NO.
◀: DIGITAL Y
◁: DIGITAL C
◀◀: DA Y
◁◁: DA C
◁◁: R-Y (V)
◁◁: B-Y (U)
○: WAVEFORMAS NO.

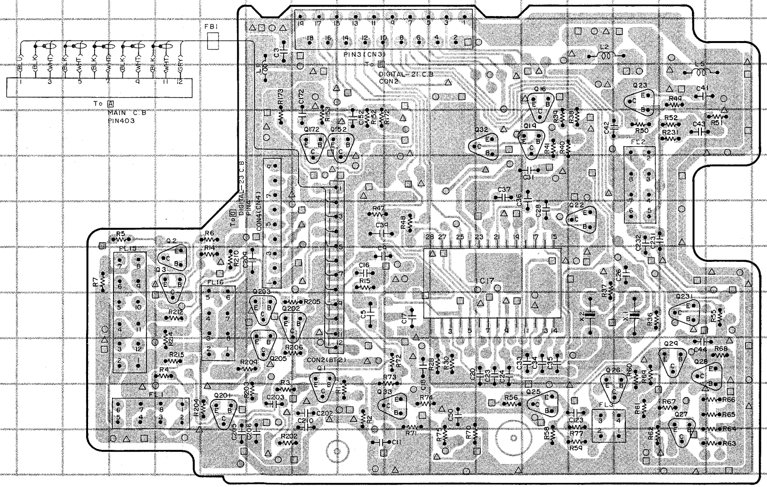
WIRING – 4 (DIGITAL SECTION)


28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 1 2 3
A B C D E F G H I J K L M N O P Q R S T U V
E DIGITAL-21 C.B
IC9
IC1
IC20
IC6
IC12
IC10
IC15
Q45
Q46
Q34
Q39
Q98
C106
C108
C86
C85
C83
C94
C96
C42
C89
C75
C132
C104
C105
C116
C106
C101
C64
C63
C72
C71
C74
C6
C97
C131
C66
R273
R277
R103
R46
R99
R105
R82
R83
R120
L17
TC3
SFR100
SFR101
D1
CON2 (CN3)
To F DIGITAL-22 C.B PIN 3
F DIGITAL-22 C.B
IC16
IC18
Q17
Q18
Q171
Q151
Q21
Q20
Q5
Q4
Q24
Q233
Q206
Q211
SFR1
SFR2
SFR3
SFR4
SFR5
SFR6
TC1
TC2
L17
L151
L6
L201
C7
C8
C24
C40
C14
C13
C2
C30
C32
C21
C12
C25
C22
C38
C43
C120
C45
C46
C47
C48
C4
C200
C201
C204
C207
C208
C209
C10
R44
R46
R45
R43
R42
R171
R151
R53
R233
R232
R34
R35
R32
R31
R29
R33
R11
R12
R13
R57
R201
R208
R211
R213
R6
G DIGITAL-23 C.B
IC171
IC19
IC151
Q251
Q176
Q178
Q156
Q158
C254
C178
C181
C182
C174
C176
C177
C179
C180
C153
C162
C161
C191
C157
C251
C158
C159
C160
R255
R254
R253
R182
R181
R184
R183
R186
R174
R141
R162
R161
R164
R163
R165
R166
R155
L172
L142
L143
L152
CON4
PIN 4 (CN4)
To F DIGITAL-22 C.B CON4
To SHIELD CASE
(YEL)
To SHIELD CASE
(YEL)
(ORG)

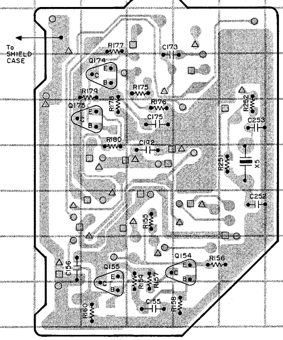
E DIGITAL-21 C.B


To CHASSIS
IC14
IC21
IC2
IC11
IC5
IC4
IC7
IC3
IC13
IC8
PIN1(CN1)
POWER-2 C.B CN101
CON1(BT1)
GLY
(WHT)
To A MAIN C.B PIN205
Q31
Q35
Q30
Q36
Q40
D2
X3
X4
FL12
FL13
FL14
FL5
FL6
FL7
FL8
FL10
FL11

F DIGITAL-22 C.B


FB1
BLU
BLK
WHT
BLK
WHT
BLK
WHT
BLK
WHT
GRY
1
3
5
7
9
11
12
To A MAIN C.B PIN403
PIN3(CN3)
To E DIGITAL-21 C.B CON2
To G DIGITAL-23 C.B PIN4
CON4(CN4)
CON2(BT2)
IC17
FL13
FL16
FL1
FL2
FL3
X1
X2
Q2
Q3
Q14
Q16
Q22
Q23
Q25
Q26
Q27
Q28
Q29
Q32
Q33
Q152
Q172
Q201
Q202
Q203
Q205
Q231

G DIGITAL-23 C.B


To SHIELD CASE
Q174
Q175
Q155
Q154
X5
R177
C173
R175
R176
C175
R180
C192
R251
R252
C253
C252
R155
R156
C156
C155
R160
R159

1
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A
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E
F
G
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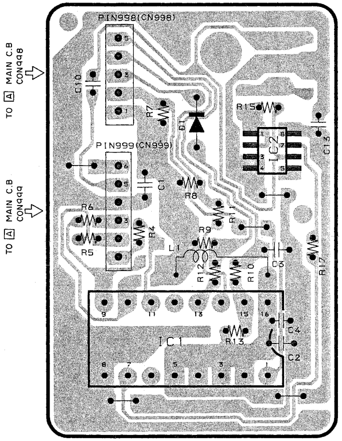
I
J
K

V SPEED SEL.C.B


PIN998(CN998)
TO A MAIN C.B CON998
TO A MAIN C.B CON999
PIN999(CN999)
C10
R7
D1
R15
IC2
C13
C1
R8
R6
R5
R4
R9
R11
L1
R12
R10
C3
R17
C4
IC1
R13
C2
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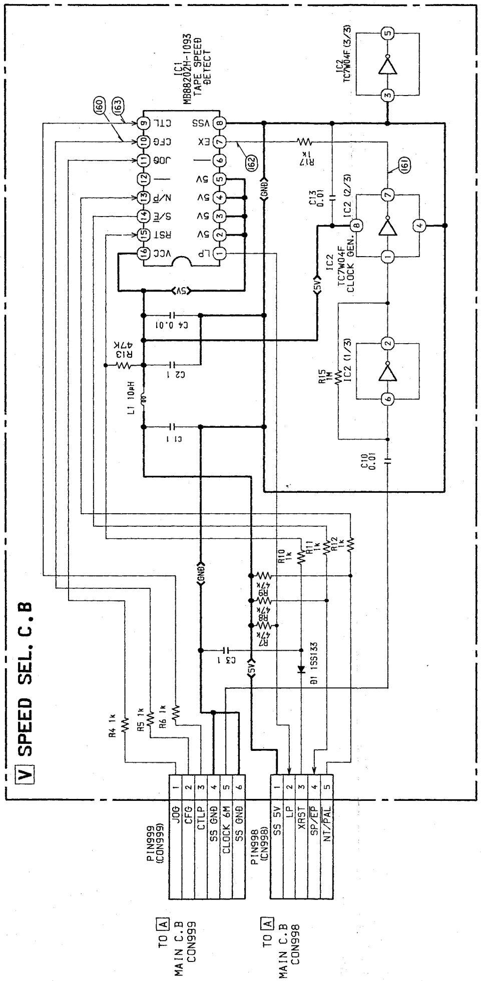
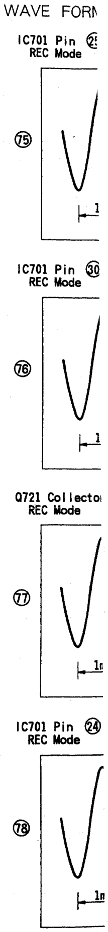
3
1

GRAPHIC SYMBOLS PRINTED CIRCUIT BOARD OF ELECT. CAP. ARE DESIGNED AS NEGATIVE POLE.

(プリント基板内のケミコンの極性表示は⊖表示です。)

SCHEMATIC DIAGRAM -11 (SPEED SELECTOR SECTION)

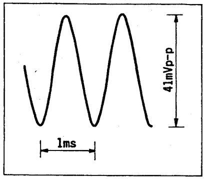

V SPEED SEL. C.B
IC1 MB88202H-1093 TAPE SPEED DETECT
IC2 TC7W04F (3/3)
IC2 TC7W04F CLOCK GEN.
IC2 (2/3)
IC2 (1/3)
CTL
CFG
JOG
N/P
S/E
RST
VCC
VSS
EX
5V
LP
(60)
(63)
(62)
(61)
R17 1k
C13 0.01
C4 0.01
R13 47k
C2 1
L1 10μH
C1 1
R15 1M
C10 0.01
R10 1k
R11 1k
R12 1k
R9 47k
R8 47k
R7 47k
C3 1
D1 1SS133
R4 1k
R5 1k
R6 1k
GND
5V
PIN999 (CON999)
JOG
CFG
CTLP
SS GND
CLOCK 6M
SS GND
PIN998 (CN998)
SS 5V
LP
XRST
SP/EP
NT/PAL
TO A MAIN C.B CON999
TO A MAIN C.B CON998



WAVE FORM – 5 (AUDIO SECTION)

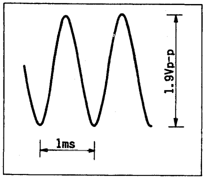
IC701 Pin ㉕
REC Mode

(75)



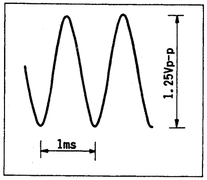
IC701 Pin ㉚
REC Mode

(76)



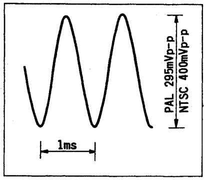
Q721 Collector
REC Mode

(77)



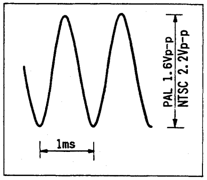
IC701 Pin ㉔
REC Mode

(78)



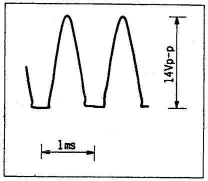
IC701 Pin ⑳
REC Mode

(79)



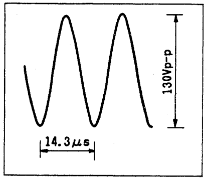
T741 Pin ①
REC Mode

(80)



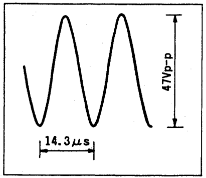
T741 Pin ⑥
REC Mode

(81)



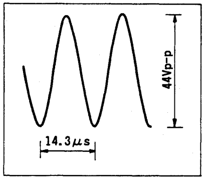
T741 Pin ⑤
REC Mode

(82)



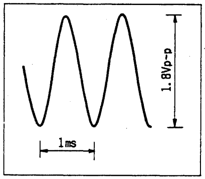
T741 Pin ④
REC Mode

(83)



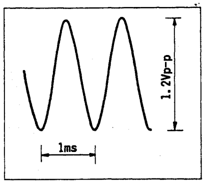
IC701 Pin ㉚
PB Mode

(84)



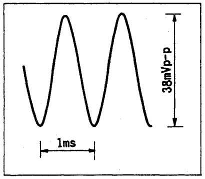
Q721 Collector
PB Mode

(85)



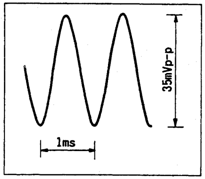
IC701 Pin ㉑
PB Mode

(86)



IC701 Pin ㉓
PB Mode

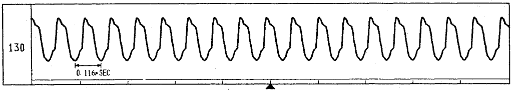
(87)



WAVE FORM – 6 (DIGITAL SECTION)

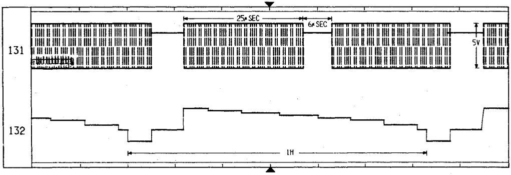
(μ S/DIV = μ sec/DIV)

(130)IC6 Pin ⑪ 2V/DIV (6.4Vp-p) 0.116 μ S/DIV

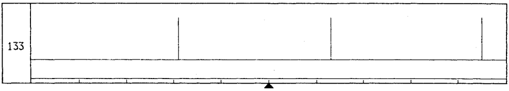


(131)IC2 Pin ⑯ 2V/DIV (6.4Vp-p) 10 μ S/DIV

(132)CON2 Pin ⑤ 0.5V/DIV (1Vp-p) 63 μ S/DIV
(DIG Y)

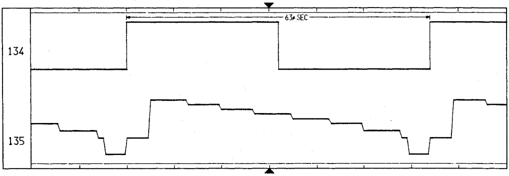


(133)IC2 Pin ⑤ 2V/DIV (5.6Vp-p) 32 μ S/DIV

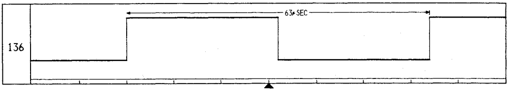


(134)IC1 Pin ㊺ 2V/DIV (5Vp-p) 10 μ S/DIV

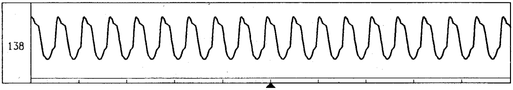
(135)CON2 Pin ⑤ 0.5V/DIV (1Vp-p) 10 μ S/DIV
(DIG Y)



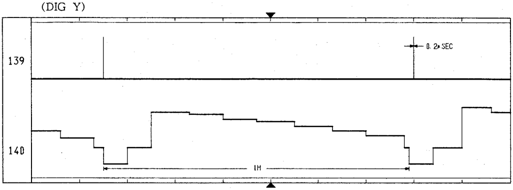
(136)IC1 Pin ㊻ 2V/DIV (5Vp-p) 10 μ S/DIV



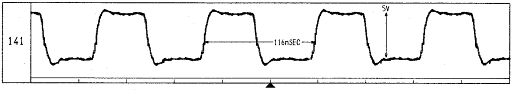
(138)IC1 Pin (64) 2V／DIV (7.6Vp-p) 0.05 μ S／DIV



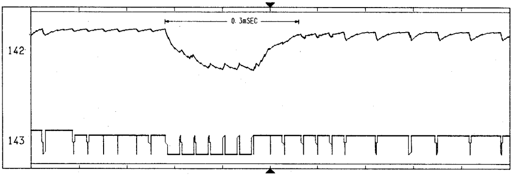
(139)IC17 Pin (24) 2V／DIV (5.6Vp-p) 10 μ S／DIV
(140)CON2 Pin (5) 0.5V／DIV (1Vp-p) 10 μ S／DIV
(DIG Y)



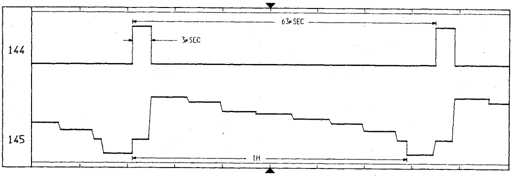
(141)IC1 Pin (68) 2V／DIV (6.4Vp-p) 0.05 μ S／DIV



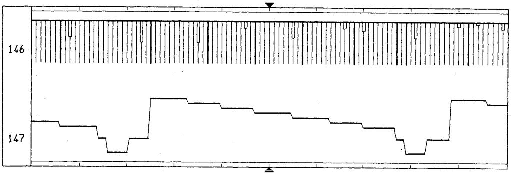
(142)IC1 Pin (82) 2V／DIV (3.0Vp-p) 100 μ S／DIV
(143)CON2 Pin (5) 0.5V／DIV (1Vp-p) 100 μ S／DIV
(DIG Y)



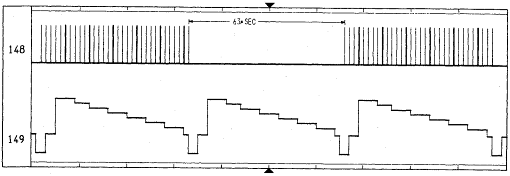
(144)IC4 Pin ⑨ 2V/DIV (5Vp-p) 10 μ S/DIV
(145)CON2 Pin ⑤ 0.5V/DIV (1Vp-p) 10 μ S/DIV
(DIG Y)



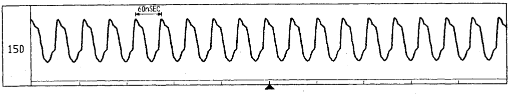
(146)IC4 Pin ⑬ 2V/DIV (5Vp-p) 10 μ S/DIV
(147)CON2 Pin ⑤ 0.5V/DIV (1Vp-p) 10 μ S/DIV
(DIG Y)



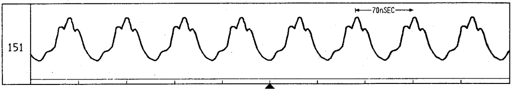
(148)IC4 Pin ⑪, ⑫ 2V/DIV (5Vp-p) 20 μ S/DIV
(149)CON2 Pin ⑤ 0.5V/DIV (1Vp-p) 20 μ S/DIV
(DIG Y)



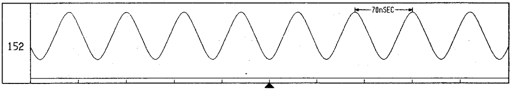
(150)IC1 Pin (89) 2V/DIV (6Vp-p) 0.05 μ S/DIV



(151)IC17 Pin ⑩ 0.5V／DIV (0.9Vp-p) 0.05 μ S／DIV

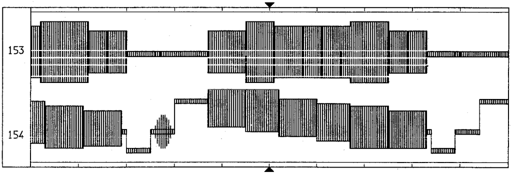


(152)IC17 Pin ⑫ 2V／DIV (0.8Vp-p) 0.05 μ S／DIV



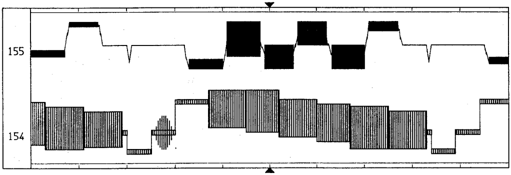
(153)IC17 Pin ③, ⑭, ⑯ 0.1V／DIV (280mVp-p) 10 μ S／DIV

(154)VIDEO OUT 0.5V／DIV (1Vp-p) 10 μ S／DIV



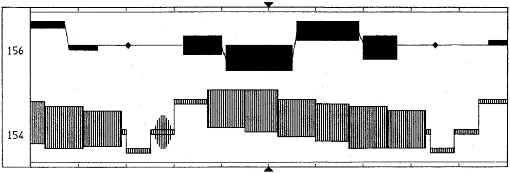
(155)IC17 Pin ⑲ 2V／DIV (1.2Vp-p) 10 μ S／DIV

(154)VIDEO OUT 0.5V／DIV (1.0Vp-p) 10 μ S／DIV



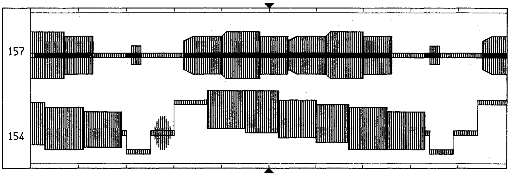
(156)IC17 Pin ⑳ 2V／DIV (1.5Vp-p) 10 μ S／DIV

(154)VIDEO OUT 0.5V／DIV (1.0Vp-p) 10 μ S／DIV



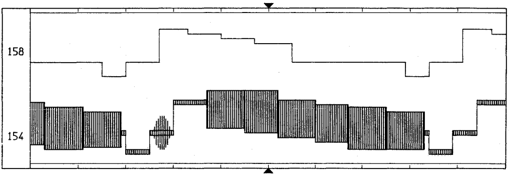
(157)IC5 Pin ⑤ 2V/DIV (1.1Vp-p) 10 μ S/DIV

(154)VIDEO OUT 0.5V/DIV (1.0Vp-p) 10 μ S/DIV

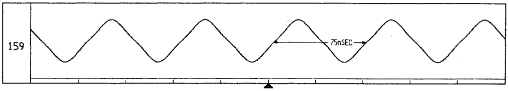


(158)IC6 Pin ⑥ 1V/DIV (0.6Vp-p) 10 μ S/DIV

(154)VIDEO OUT 0.5V/DIV (1.0Vp-p) 10 μ S/DIV



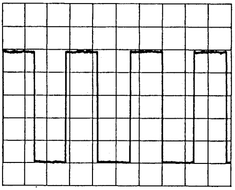
(159)IC151, IC171 Pin ③ 0.5V/DIV (0.3Vp-p) 0.05 μ S/DIV



WAVE FORM – 7 (SPEED SELECTER SECTION)

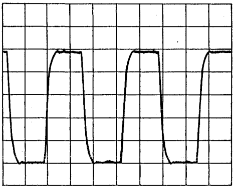
IC1 Pin ⑩ (CFG)
1V/div.
0.5ms/div.

(160)



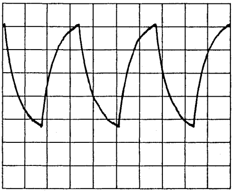
IC2 Pin ⑦ (CFG)
1V/div.
50ns/div.

(161)



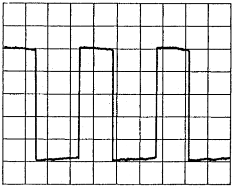
IC1 Pin ⑦ (CLOCK)
1V/div.
50ns/div.

(162)



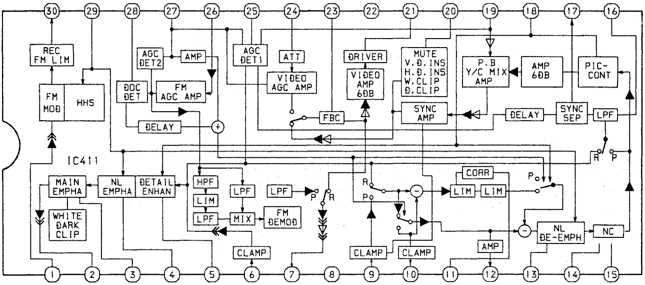
IC1 Pin ⑨ (CTL)
1V/div.
10ms/div.

(163)



IC BLOCK DIAGRAM – 1

IC,LA7323



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REC FM LIM
AGC DET2
AMP
AGC DET1
ATT
DRIVER
MUTE V.D.INS H.D.INS W.CLIP D.CLIP
P.B Y/C MIX AMP
AMP 6DB
PIC-CONT
FM MOD
HHS
DOC DET
FM AGC AMP
VIDEO AGC AMP
VIDEO AMP 6DB
SYNC AMP
DELAY
SYNC SEP
LPF
FBC
DELAY
IC411
R
P
CORR
MAIN EMPHA
NL EMPHA
DETAIL ENHAN
HPF
LIM
LPF
LPF
LPF
MIX
FM DEMOD
LIM
LIM
WHITE DARK CLIP
NL DE-EMPH
NC
AMP
CLAMP
CLAMP
CLAMP
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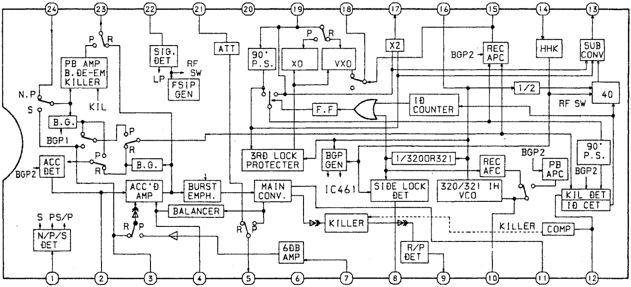
IC,LA7333



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P
R
SIG. DET
RF SW
LP
FSIP GEN
ATT
90° P.S.
XO
VXO
X2
BGP2
REC APC
HHK
SUB CONV
PB AMP B.DE-EM KILLER
N.P
S
KIL
1/2
40
RF SW
F.F
ID COUNTER
B.G.
BGP1
ACC DET
BGP2
B.G.
3RD LOCK PROTECTER
BGP GEN
1/3200R321
REC AFC
BGP2
PB APC
90° P.S.
BGP2
ACC'D AMP
BURST EMPH.
MAIN CONV.
IC461
SIDE LOCK DET
320/321 IH VCO
KIL DET
ID CET
BALANCER
S PS/P
N/P/S DET
KILLER
KILLER
COMP
6DB AMP
R/P DET
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3
4
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8
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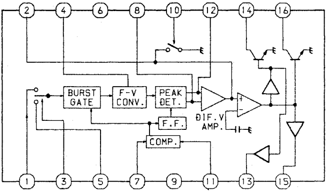
12

IC,LA7311



2
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16
BURST GATE
F-V CONV.
PEAK DET.
F.F.
COMP.
DIF.V AMP.
+
-
1
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11
13
15

IC DESCRIPTION

IC, MB87813A

Pin No.	Pin Name	I/O	Description
1	RVD	–	Unused.
2	XTEST	–	Connected to VDD.
3	VDD	–	Power supply pin.
4	VSS	–	Connected to ground.
5	DIGXAT	–	Unused.
6	MUTE	–	Connected to ground.
7~14	DAY0~DAY7	O	Y D/A converter data outputs. DAY7 (MSB), DAY0 (LSB).
15	VSS	–	Connected to ground.
16	YDACK	O	Y D/A converter clock output. (550 fH)
17	CGIN	–	Connected to ground.
18,19	XRW, XRE	–	Connected to VDD.
20~27	AA0~AA7	O	Memory A address outputs. AA7 (MSB), AA0 (LSB).
28	VDD	–	Power supply pin.
29	VSS	–	Conncted to ground.
30	XACAS	O	Memory A CAS output.
31	XARAS	O	Memory A RAS output.
32	R50	I	R50 input.
33	W50	I	W50 input.
34	SCK	–	Connected to ground.
35	DIKY	–	Connected to VDD.
36~39	MAD0~MAD3	I/O	Memory A data bus. MAD3 (MSB), MAD0 (LSB).
40	VSS	–	Connected to ground.
41~44	MBD0~MBD3	I/O	Memory B data bus.
45	XAWE	O	Memory A write enable output.
46	XBWE	O	Memory B write enable output.
47	XRAMS	–	Connected to VDD.
48	PCSYNC	–	Connected to ground.
49	PDETV	–	Connected to ground.
50	XCLR	I	Reset input.
51	XBRAS	O	Memory B RAS output.
52	XBCAS	O	Memory B CAS output.

Pin No.	Pin Name	I/O	Description
53	VDD	–	Power supply pin.
54	VSS	–	Connected to ground.
55~62	BA0~BA7	O	Memory B address outputs. BA7 (MSB), BA0 (LSB).
63	WE	I	Write enable input.
64	YCLK	I	System main clock input. (1100 fH)
65	VSS	–	Connected to ground.
66	ADCK	O	A/D converter clock output. (1100 fH)
67	WHD	O	Write system HD pulse output.
68	WOB	O	Wobbling clock output. (550 fH)
69	VSS	–	Connected to ground.
70~75	AD~AD5	I	A/D converter data inputs. AD5 (MSB), AD0 (LSB).
76	PPALP	–	Connected to ground.
77	PENCK	–	Connected to ground.
78	VDD	–	Power supply pin.
79	VSS	–	Connected to ground.
80	PHER	O	AFC error pulse output.
81	SPER	–	Unused.
82	DETV	I	VD input.
83	CSYNC	I	Composite sync input.
84	JOG	I	Jog mode control input.
85	CLAMP	O	Pedestal clamp pulse output.
86	SEL Y	O	Input multiplexer Y select pulse.
87	SEL U	O	Input multiplexer U select pulse.
88	CEL V	O	Input multiplexer V select pulse.
89	ENCCK	I	Digital encode clock input. (4 fsc)
90	VSS	–	Connected to ground.
91	CDACK	O	Chroma system D/A converter clock output. (4 fsc)
92	RUXV	–	Unused.
93~98	DAC0~DAC5	O	Chroma system D/A converter data outputs. DAC5 (MSB), DAC0 (LSB).
99	CBLK	–	Unused.
100	RHD	–	Unused.

IC, HD404302RA36S

Pin No.	Pin Name	I/O	Description
1	KA/$\overline{\text{M}}$	O	Outpusts a signal which designates the auto or manual status to the mechanism microprocessor.
2	TR. CLK	O	Clock output for transferring tracking data.
3	TR. DATA	O	Playback tracking data output.
4	——	–	Not used. (Fixed at "L")
5	A/D POS	O	Not used.
6	$\overline{\text{NLOCK}}$	O	Not used.
7	$\overline{\text{D RST}}$	O	Outputs a reset pulse to the noise cancel circuit to detect the position of noise.
8	TR LED	O	Outputs a tracking LED control signal.
9	——	–	Not used. (Fixed at "H")
10	T MODE	I	Not used. (Fixed at "H")
11	AUTO/$\overline{\text{MAN}}$	I	Auto tracking ON/OFF signal. ("H" in the auto mode)
12	$\overline{\text{ACK}}$	I	Signal to indicate whether or not the playback tracking data is transfered correctly.
13	A/D OUT 1	–	Not used. (Fixed at "L".)
14	A/D OUT 2		
15	A/D OUT 3		
16	A/D OUT 4		
17	A/D OUT 5		
18	——	–	Not used.
19	RF SWP	I	Head switching signal.
20	DOC P	I	Receives the noise position detection signal for the noise cancel circuit.
21	GND	–	Ground.
22	AVCC	–	Power supply of A/D converter. (+5V)
23	V LEV	I	Signal to detect the video level. (analog DC)
24	——	–	Not used. (Fixed at "L".)
25			
26			
27	AVSS	–	Power supply of A/D converter. (Connected to Ground)
28	TRKG RST	I	Reset signal. ("H" when reset)
29	$\overline{\text{TEST}}$	–	Not used. (Fixed at "H".)
30	X	–	Connected to a clock generator.
31	EX	–	
32	VCC	–	Power supply. (+5V)
33	ET/$\overline{\text{BT}}$	I	Not used. (Fixed at "H".)
34	PAL/$\overline{\text{NTSC}}$	I	PAL, NTSC switching signal. ("H" for PAL)
35	PAUSE	I	Detects "H" in the STILL mode to cancel noise.
36	JOG	I	"H" is input during CUE and REV.
37	D – PB	I	"H" is input during PLAY.
38	CTL P	I	Shaped CTL pulse input.
39	C CONT	O	Outputs a noise feed pulse to cancel noise.
40	A/D OUT 6	–	Not used.
41	A/D OUT 7		
42	A/D OUT 8		

IC, HD49754NT

Pin No.	Pin Name	I/O	Description
1	———	–	———
2	MODE OUTPUT C	O	Speed mode outputs.
3	MODE OUTPUT B		
4	MODE OUTPUT A		
5	CTL MM	–	Not used.
6	PG MM	–	Switching position monostable multivibrator. Delay time constant for head switching point adjustment.
7	DRUM PG	I	Drum PG input.
8	GND	–	Connected to Ground.
9	DRUM FG	I	Drum FG input.
10	DRUM SELECT A	I	Fixed at "H".
11	DRUM SELECT B		
12	DRUM MIX AMP	–	Drum servo phase/speed error mixing amp.
13			
15			
16			
18			
21	CAP MIX AMP	–	Capstan servo phase/speed error mixing amp.
23			
24			
25			
26			
27			
14	DRUM FV OUT	O	Drum servo speed error output. (D/A output)
17	DRUM PD OUT	O	Drum servo phase error output. (D/A output)
19	NTSC/$\overline{\text{PAL}}$	I	NTSC/PAL switching signal input. ("H" in NTSC)
20	CAP PD OUT	O	Capstan servo phase error output. (D/A output)
22	CAP FV OUT	O	Capstan servo speed error output. (D/A output)
28	VCC	–	Power supply. (+5V)
29	CTL HEAD –	–	Input/output pin for the control head.
30	CTL HEAD +		
31	GND	–	Connected to Ground.
32~35	CTLP AMP	–	CTL amp.
36	CTLP IN	I	Playback CTL pulse input.
37	C FG	I	Capstan FG input.
38	VCC	–	Power supply. (+5V)
39	CTL CLK	–	Not used.
40	DUTY I/O	O	VISS detection output. ("L" when detectd)
41	———	–	Fixed at "L".
42	3fsc IN	I	Reference clock input. NTSC : 10.738635MHz, PAL : 13.300856MHz
43	3fsc OUT	–	Not used.
44	———	–	———
45	V FF	O	Video head switching signal output.
46	A FF	–	Not used.
47	E FF	–	Not used.
48	VP	O	Artificial VD pulse output.
49	———	–	———
50	CMP SYNC	I	Composite sync signal input.
51	EXT. RESET	I	Fixed at "H".
52	P. ON RESET	I	Resets the IC when the power is tuned on so that current is not supplied to the CTL HEAD pins.
53	S. DATA	I	Servo control serial data input. (16bits)
54	S. CLK	I	S. DATA transferring clock input.
55	CFG C/D	–	Counts down the CFG pulses by the speed multiple in search and outputs them.
56	CTL C/D	O	Counts down the CTL pulses by the speed multiple in search and outputs them.

IC, M51271FP

Pin No.	Pin Name	I/O	Description
1	BGP	–	Burst gate pulse phase setting time constant
2	BGW	I	Burst gate pulse width setting voltage input
3	CO	O	ACC chroma output
4	AGC	I	Color saturation control voltage input
5	CI	I	Chroma input
6	BC	–	Input bias capacity
7	ACCF	–	ACC filter time constant
8	VR	–	Reference voltage
9	APCF	–	APC filter time constant
10	XO	O	VCXO output
11	TINT	I	Chroma phase control voltage input
12	XI	I	VCXO input
13	GND	–	Connected to ground
14	UIN	I	U – axis decoder input
15	VCC	–	Power supply pin
16	VIN	I	V – axis decoder input
17	N/$\overline{P}$	O	NTSC/PAL switching
18	FSC	O	Subcarrier output
19	UO	O	U – axis decoder output
20	VO	O	V – axis decoder output
21	KFC	–	Killer filter capacity
22	KRF	–	Killer reference filter capacity
23	BLK	–	Connected to VCC
24	HD	I	HD pulse input
25	VIN	I	Y input
26	FBC	–	Sync separator feedback capacity
27	TH	I	Sync separator slice level input
28	SYNC	O	Composite sync output

IC, MB88515B – 1626K

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th><th>Active</th></tr>
<tr><td>1</td><td>TL – F</td><td rowspan="2">O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the tape sledding motor.
<table>
<tr><th>TL-F</th><th>TL-R</th><th>State</th></tr>
<tr><td>L</td><td>L</td><td>Stops</td></tr>
<tr><td>H</td><td>L</td><td>Rotates forward</td></tr>
<tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr>
<tr><td>H</td><td>H</td><td>Braking to stop</td></tr>
</table></td><td rowspan="2">H</td></tr>
<tr><td>2</td><td>TL – R</td></tr>
<tr><td>3</td><td>CM – F</td><td rowspan="2">O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the capstan motor.
<table>
<tr><th>CM-F</th><th>CM-R</th><th>State</th></tr>
<tr><td>L</td><td>L</td><td>Stops</td></tr>
<tr><td>H</td><td>L</td><td>Rotates forward</td></tr>
<tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr>
<tr><td>H</td><td>H</td><td>Braking to stop</td></tr>
</table></td><td rowspan="2">H</td></tr>
<tr><td>4</td><td>CM – R</td></tr>
<tr><td>5</td><td>A MUTE</td><td>O</td><td>Muting of audio signals.
Outputs "H" during trick play. When switching between the recorded signal and EE signal, this pin outputs "H" for the specified period before and after the inversion of the EE output to eliminate switching noise.</td><td>H</td></tr>
<tr><td>6</td><td>FLASH</td><td>O</td><td>Not used.</td><td>H</td></tr>
<tr><td>7</td><td>V MUTE</td><td>O</td><td>Muting of video signals.
Outputs "H" when the power is turned off and "L" when it is turned on.
When the power is switched from OFF to ON, however, this pin outputs "H" for the specified period to switch and then outputs "L".</td><td>H</td></tr>
<tr><td>8</td><td>$\overline{\text{EE}}$</td><td>O</td><td>Switches the video output between the external input signal and tape playback signal.
"H" : Tape playback signal
"L" : External input signal</td><td>L</td></tr>
<tr><td>9</td><td>$\overline{\text{ACK}}$</td><td>O</td><td>Serial communication reception complete signal from the tracking microprocessor.
Outputs "H" during serial communication and "L" When reception is completed. Continues to output "H" when reception is not completed due to an error in reception, etc.</td><td>L</td></tr>
<tr><td>10</td><td>P – ON</td><td>O</td><td>Outputs "H" during power on.</td><td>H</td></tr>
<tr><td>11</td><td>PAL/$\overline{\text{NTSC}}$</td><td>O</td><td>Output to switch between PAL and NTSC video signals.
"H" : PAL
"L" : NTSC</td><td>–</td></tr>
<tr><td>12</td><td>TRKG RST</td><td>O</td><td>Tracking microprocessor reset signal.
Outputs a pulse to reset the tracking microprocessor.</td><td>H</td></tr>
<tr><td>13</td><td>PLAY</td><td>O</td><td>Outputs "H" during the PLAY, STILL, CUE, REV and S – ADV modes.</td><td>H</td></tr>
<tr><td>14</td><td>D – PAUSE</td><td>O</td><td>Outputs "H" during the STILL and S – ADV modes.</td><td>H</td></tr>
<tr><td>15</td><td>REC</td><td>O</td><td>Outputs "H" in the REC mode.
Outputs a 500ms pulse in the REC PAUSE mode.</td><td>H</td></tr>
<tr><td>16</td><td>REPEAT</td><td>O</td><td>Outputs "H" in the REPEAT mode.</td><td>H</td></tr>
<tr><td>17</td><td>D – REC</td><td>O</td><td>When switched from STOP To REC and form REC PAUSE to REC, etc. and this pin outputs "H".</td><td>H</td></tr>
<tr><td>18</td><td>JOG</td><td>O</td><td>Outputs "H" during the CUE and REV modes.</td><td>H</td></tr>
</table>

Pin No.	Pin Name	I/O	Description	Active
19	D – PLAY	O	When switched from STOP to PLAY and from STOP to STILL, etc. and this pin outputs "H".	H
20	VCR/$\overline{\text{TV}}$	–	Not used.	–
21	PAL	O	Outputs "H" in the PAL mode.	H
22	MESECAM	O	Outputs "H" in the MESECAM mode.	H
23	NTSC3.58	O	Outputs "H" in the NTSC 3.58 mode.	H
24	NTSC4.43	O	Outputs "H" in the NTSC 4.43 mode.	H
25	EX	I	Connected to a clock oscillator (6MHz) which generates a system clock pulse.	–
26	X	O		
27	$\overline{\text{RST}}$	I	System reset input.	L
28	SO	O	Serial data output.	–
29	LP	I	LP input.	–
30	$\overline{\text{SCK}}$	O	Serial data clock.	–
31	REMOCON	I	Remote control data input.	L
32	VSS	–	Connected to Ground.	–
33	S.CLK	O	Outputs a timing pulse to the servo IC to transfer serial data.	–
34	S.DATA	O	Transfers serial data to the servo IC.	–
35	SP/$\overline{\text{EP}}$	I	SP/$\overline{\text{EP}}$ input.	–
36	NT/$\overline{\text{PAL}}$	I	NT/$\overline{\text{PAL}}$ input.	–
37	KI0	I	Key matrix scan inputs.	L
38	KI1			
39	KI2			
40	KI3			
41	$\overline{\text{SYNC}}$	I	Signal to synchronize serial communications with the timer microprocessor.	L
42	$\overline{\text{VISS}}$	I	Detects a VISS signal.	L
43	AVSS	–	Connected to Ground.	–
44	AVR –	–	Connected to Ground.	–
45	AVR +	–	Positive power terminal, connected to SS5V.	–
46	AVCC	–	Positive power terminal, connected to SS5V.	–
47	D – STILL	O	Outputs "H" during STILL and STILL – ADVANCE.	H
48	$\overline{\text{LINE}}$/TUN (A)	O	Switches the audio input. "H" : Tuner audio. "L" : Line audio.	–
49	KO5	O	Key matrix scan output signals.	–
50	KO4			
51	KO3			
52	KO2			
53	KO1			
54	KO0			
55	TOP S.	I	Receives a tape start detection signal. Inhibits switching to the reverse direction. When this signal is input during reverse running, it shifts the VCR to the stop mode.	H
56	END S.	I	Receives a tape end detection signal. Inhibits switching to the forward direction. When this signal is input during forward running, it shifts the VCR to the auto rewind mode.	H
57	RF SWP.	I	Receives drum rotation pulses. When the output of pulses is stopped for 2 seconds during an operation mode in which the drum rotates due to an anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.	–

Pin No.	Pin Name	I/O	Description	Active
58	REEL S.	I	Receives a signal from the reel sensor in the mechanism. When the output of pulses is stopped for 2 seconds during an operation mode in which the reel rotates due to anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.	–
59	(PULL UP)	–	Not used.	–
60	$\overline{\text{C}\cdot\text{START}}$	I	Connected to a cassette start switch in the cassette loading mechanism to perform the cassette – in operation (loading). When this signal is detected during eject, the capstan motor is switched to be pulse driven.	L
61	$\overline{\text{C}-\text{IN}}$	I	Connected to a cassette – in switch in the cassette loading mechanism to detect the cassette – in status.	L
62	$\overline{\text{C}-\text{OUT}}$	I	Connected to a cassette – out switch in the cassette loading mechanism to detect the cassette – out (eject) status. Instructs to stop the cassette – out operation (unloading).	L
63	NC	–	Not used.	–
64	VCC	–	Positive power terminal, connected to SS5V.	–

IC1, MB88202H – 1093

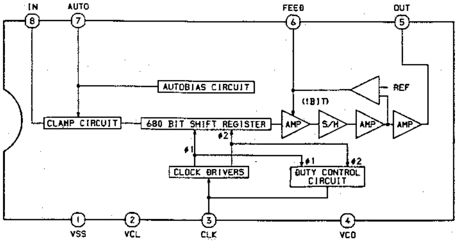
Pin No.	Pin Name	I/O	Description
1	LP	O	Outputs the current playback format and speed in combination with pins 13 and 14 (See the Table below).
2	–	–	Connected to IC power supply (5V).
3	–	–	
4	–	–	
5	–	–	
6	–	–	Not connected.
7	EX	I	Clock input.
8	VSS	–	Ground.
9	CTL	I	CTL signal input from servo circuit.
10	CFG	I	CFG signal input from servo circuit.
11	JOG	I	JOG mode signal input from system control circuit.
12	–	–	Not connected.
13	N/$\overline{\text{P}}$	O	Output the current playback format and speed in combination with pin 1 (see Table below).
14	S/$\overline{\text{E}}$	O	
15	RST	I	Reset signal input.
16	VCC	VCC	+ 5V power supply pin.

Pin No.	Pin Name	NTSC · SP	NTSC · LP	NTSC · EP	PAL · SP	PAL · LP
1	LP	L	H	L	L	H
13	NT/$\overline{\text{PAL}}$	H	H	H	L	L
14	SP/$\overline{\text{EP}}$	H	H	L	H	H

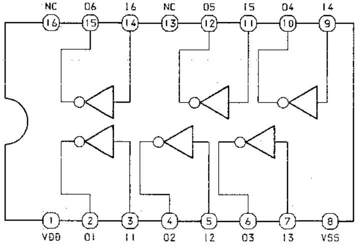
H = 5V
L = 0V

IC BLOCK DIAGRAM – 2

IC,CXL5001P,
IC,CXL5003P


IN
AUTO
FEED
OUT
8
7
6
5
AUTOBIAS CIRCUIT
REF
(1BIT)
CLAMP CIRCUIT
680 BIT SHIFT REGISTER
AMP
S/H
AMP
AMP
ϕ2
ϕ1
ϕ1
ϕ2
CLOCK DRIVERS
DUTY CONTROL CIRCUIT
1
2
3
4
VSS
VCL
CLK
VCO

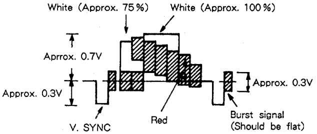
IC,TC4049BP

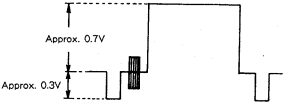

NC
O6
I6
NC
O5
I5
O4
I4
16
15
14
13
12
11
10
9
1
2
3
4
5
6
7
8
VDD
O1
I1
O2
I2
O3
I3
VSS

ELECTRICAL ADJUSTMENT

Set-up for Adjustment

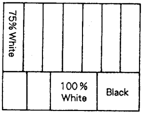
Since the video signal from the pattern generator is used for adjustment, the characteristics of this signal should be within the specificatis. Therefore, while observing the output waveform with a 75-ohm load, check that the amplitudes of the sync signal, video component and the burst signal are approx. 0.3V, 0.7V and 0.3V, and the burst amplitude is flat. Also check that the ratio in level between the burst and red signals is 0.30 : 0.66. If these values are not satisfied with the video output signal, the pattern generator should be calibrated. (Refer to the instruction manual of the pattern generator.)


White (Approx. 75%)
White (Approx. 100%)
Aprrox. 0.7V
Approx. 0.3V
Approx. 0.3V
V. SYNC
Red
Burst signal
(Should be flat)


Approx. 0.7V
Approx. 0.3V

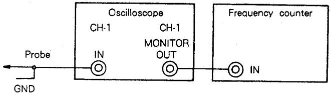
Color bar signal of all white raster

Color bar signal of the patttern generator

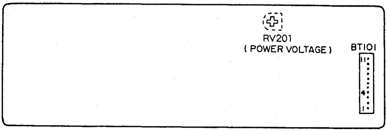

75% White
100% White
Black

TV Screen

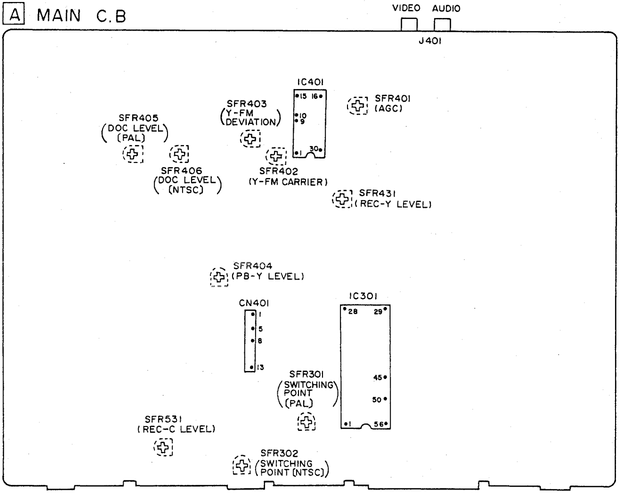
Connection method of the measurements


Oscilloscope
CH-1
IN
CH-1
MONITOR
OUT
Frequency counter
IN
Probe
GND

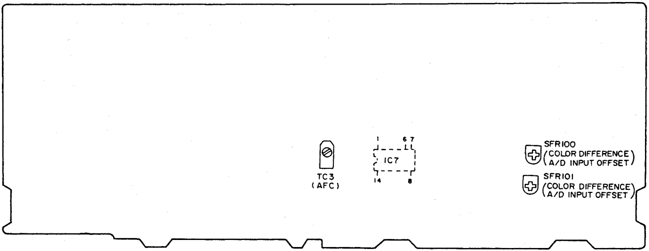
U POWER-2 C.B


RV201
(POWER VOLTAGE)
BT101
11
4
1

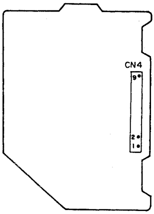
A MAIN C.B


VIDEO
AUDIO
J401
IC401
15
16
10
9
1
30
SFR401
(AGC)
SFR403
(Y-FM DEVIATION)
SFR405
(DOC LEVEL (PAL))
SFR406
(DOC LEVEL (NTSC))
SFR402
(Y-FM CARRIER)
SFR431
(REC-Y LEVEL)
SFR404
(PB-Y LEVEL)
CN401
1
5
8
13
IC301
28
29
45
50
1
56
SFR301
(SWITCHING POINT (PAL))
SFR531
(REC-C LEVEL)
SFR302
(SWITCHING POINT (NTSC))

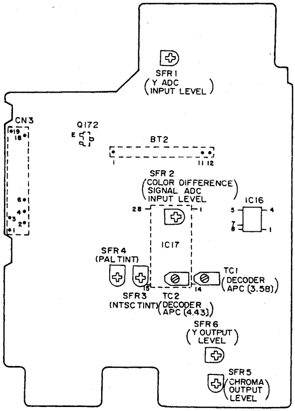
E DIGITAL-21 C.B


TC3
(AFC)
IC7
1
6 7
14
8
SFR100
(COLOR DIFFERENCE A/D INPUT OFFSET)
SFR101
(COLOR DIFFERENCE A/D INPUT OFFSET)

G DIGITAL-23 C.B



F DIGITAL-22 C.B


SFR1
(Y ADC INPUT LEVEL)
CN3
19
18
6
4
3
2
1
Q172
E
BT2
1
11 12
SFR2
(COLOR DIFFERENCE SIGNAL ADC INPUT LEVEL)
IC16
5
4
7
8
1
28
1
IC17
15
14
SFR4
(PAL TINT)
SFR3
(NTSC TINT)
TC2
(DECODER APC (4.43))
TC1
(DECODER APC (3.58))
SFR6
(Y OUTPUT LEVEL)
SFR5
(CHROMA OUTPUT LEVEL)

When the signals in parentheses [ ] are used, the adjustment values should also be set to those in parentheses [ ].

1. Power Voltage Adjustment (U POWER-2 C.B)

1) Connect a digital tester between BT101 pin ④ and pin ① on the POWER C.B.
2) Adjust RV201 on the POWER C.B so that the voltage is 12.2 ± 0.3V.

Servo Circuit Adjustment

2. Switching Point Adjustment (A MAIN C.B)

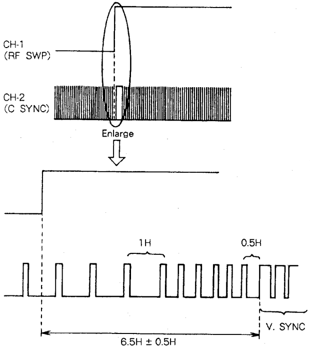
Oscilloscope : CH-1 : IC301 pin ㊺ (RF SWP)
CH-2 : IC301 pin ㊿ (C SYNC)

1) SET the AUTO TRACKING switch to OFF and set the manual tracking to the center.

※ Load or unload a cassette or change over the SYSTEM switch to reset the tracking to the center.

2) Set the SYSTEM switch.
   PAL : Set to PAL.
   NTSC : Set to NTSC 3.58
   Set the CONV switch to THRU.
3) Playback alignment tape.
   PAL : TTV-P1
   NTSC : TTV-N1
4) Adjust to the following specification.
   PAL : SFR301
   NTSC : SFR302

※ Be sure to adjust PAL first



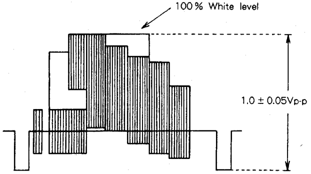
Video Circuit Adjustment

3. PB Y Level Adjustment (A MAIN C.B)

Oscilloscope : VIDEO OUT (J401)

1) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback TTV-P1 [TTV-N1] and adjust SFR404 so that the waveform is as shown in the figure below.

※ Connect a monitor VIDEO OUT or terminate VIDEO OUT with 75-ohm.



3) Set the SYSTEM switch to NTSC 3.58 [PAL].
4) Playback TTV-N1 [TTV-P1] and check that the level is within the specification.

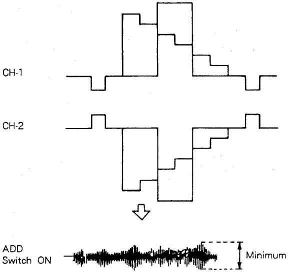
Specification : The 100 % white level is 1.0V ± 0.05Vp-p.

4. DOC Level (PAL) Adjustament (A MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨
CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-P1.
2) Set the SYSTEM switch to PAL.
3) Turn the oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR405 so that the waveform becomes minimum as shown in the figure.

※ Leave the oscilloscope power range the same as that of the CH-1 and CH-2 range.

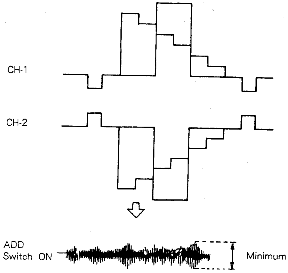


5. DOC Level (NTSC) Adjustment (A MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨
CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-N1.
2) Set the SYSTEM switch to NTSC 3.58.
3) Turn athe oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR406 so that the waveform becomes minimum as shown in the figure.

※ Leave the oscilloscope power range the same as that of athe CH-1 and CH-2 range.



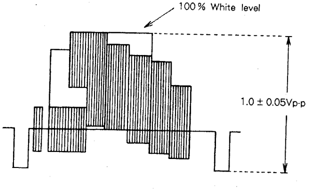
6. AGC Adjustment (A MAIN C.B)

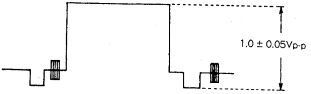
Oscilloscope : VIDEO OUT (J401)

1) Apply a PAL [NTSC 3.58] color bar signal (with 100 % white) to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR401 so that the specification in the figure below is satisfied in the E-E mode. 1.0V ± 0.05Vp-p.

※ Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75-ohm.

4) Apply an NTSC 3.58 [PAL] color bar signal (with 100 % white) to VIDEO IN.
5) Check that the specification shown in the figure below is satisfieid in the E-E mode. 1.0V ± 0.05Vp-p.





7. Y-FM Carrier Adjustment (A MAIN C.B)

Oscilloscope : CN401 pin ⑤

1) Set LINE IN to the no signal input state (no equipment is connected). Set the SYSTEM switch to NTSC 3.58 and CONV switch to THRU.
2) Adjust SFR402 so that the reading of the frequency counter is within the specification in the E-E mode.
   Specification : 3.4MHz ± 0.05MHz
3) Set the SYSTEM switch to PAL.
4) Check that the frequency is within the specification in the E-E mode.
   Specification : 3.8MHz ± 0.05MHz

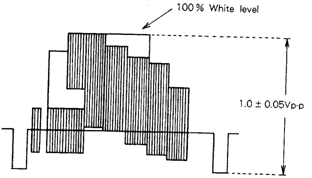
8. Y-FM Deviation Adjustment (A MAIN C.B)

Oscilloscope : VIDEO OUT (J401)

1) Apply PAL [NTSC 3.58] color bar signal (with 100 % white) to LINE IN and record it. Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback the recorded section and check that the level is within the specification as shown below.
3) If the level is out of the specificatin, adjust SFR403.
4) Repeat steps 1) and 2) so that the level is within the specification.
5) Apply an NTSC 3.58 [PAL] color bar signal (with 100 % white) toVIDEO IN and record it. Set the SYSTEM switch to an NTSC 3.58 [PAL].
6) Play back the recorded section and check that the level is within the specification.

※ Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75 Ω.

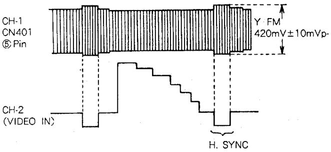
※ The Y-FM carrier should have already been adjusted before this adjustment.



9. REC Y Level Adjustment ([A] MAIN C.B)

Oscilloscope : CH-1 : CN401 pin ⑤
CH-2 : VIDEO IN (J401)

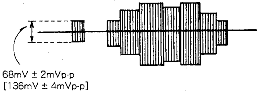
1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR431 so that the SYNC tip level is as shown in the figure in the E-E mode.


CH-1
CN401
⑤Pin
Y FM
420mV±10mVp-
CH-2
(VIDEO IN)
H. SYNC

10. REC C Level Adjustment ([A] MAIN C.B)

Oscilloscope : CH-1 : CN401 pin ⑧
CH-2 : VIDEO IN (J401)

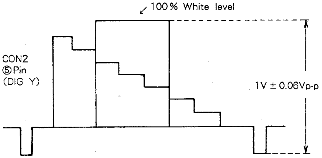
1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR531 so that the color burst level is 68mV ± 2mVp-p [136mV ± 4mVp-p] as shown in the figure in the E-E mode.


68mV ± 2mVp-p
[136mV ± 4mVp-p]

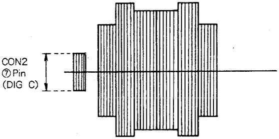
Digital Converter Circuit Adjustment

※ VIDEO circuit board adjustment should have already been adjusted before this adjustment

※ Check that the level is within the specificatin shown in the figure below is satisfied.


100% White level
CON2
⑤Pin
(DIG Y)
1V ± 0.06Vp-p

SYNC tip~100% white level 1Vp-p.


CON2
⑦Pin
(DIG C)

Burst level : 286 ± 10mVp-p. (at input NTSC3.58)
300 ± 10mVp-p. (at input PAL)

11. AFC Adjustment ([E] DIGITAL-21 C.B)

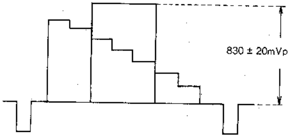
Digital voltmeter : IC7 pin ⑥ (AFC ER)

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust TC3 so that the digital voltmeter reads DC 1.9 ± 0.1V [DC 1.7 ± 0.1V] in the E-E mode.

12. Y ADC Input Level Adjustment (F DIGITAL-22 C.B)

Oscilloscope : CN3 pin ⑥ (AD Y)

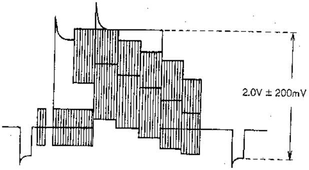
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR1 so that the level at the check land (AD Y) is as shown in the E-E mode.



13. Y Output Level Adjustment (F DIGITAL-22 C.B)

Oscilloscope : IC16, pin ⑦ (DIG V) or BT2, pin ⑪

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 4.43] and the CONV switch to NTSC [PAL].
3) Adjust SFR6 so that the level at IC16 pin⑦ is as shown in the figure below.



14. Decoder APC Adjustment (3.58 MODE) (F DIGITAL-22 C.B)

Frequency counter : IC17 pin ⑱ (FSC)

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Connect a 0.1 μF capacitor between IC17 pin ⑤ and REG GND, and a 1M ohm resistor between IC17 pin ⑨ and pin ⑮ (REG 5V).
4) Adjust TC1 so that the reading of the frequency counter is within the specification.
   K model: 3.579500MHz ± 50Hz.
   Z model: 3.579800MHz ± 50Hz.
5) Disconnect a 0.1 μF capacitor and a 1Mohm risistor and check that the frequency counter reads 3.579545MHz ± 5Hz or the waveform matches fsc (J401) from the pattern generator.

15. Decoder APC Adjustment (4.43 MODE) (F DIGITAL-22 C.B)

Frequency counter : IC17 pin ⑱ (FSC)

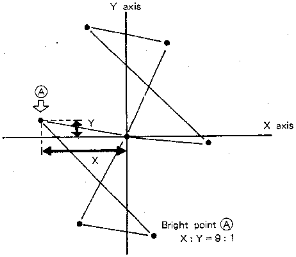
1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL.
3) Connect a 0.1 μF capacitor and 1M ohm resistor in the same way as in Decoder APC Adjustment (3.58 MODE).
4) Adjust TC2 so that the reading of the frequency counter is within the specification.
   K model: 4.433800MHz ± 50Hz.
   Z model: 4.434000MHz ± 50Hz.
5) Disconnect the capacitor and risistor and check that the frequency counter reads 4.433619MHz ± 1Hz or the waveform matches fsc (J401) from the pattern generator.

16. NTSC Tint Adjustment ([F] DIGITAL-22 C.B)

Oscilloscope : CH-1 : CN3 pin ④ (AD U)
CH-2 : CN3 pin ③ (AD V)

※ Set the oscilloscope to the X-Y indication and 100mV range.

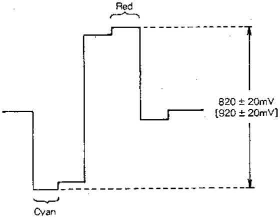
1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Adjust SFR3 so that the level at point Ⓐ becomes as shown in the figure below.


Y axis
X axis
Ⓐ
Y
X
Bright point Ⓐ
X : Y = 9 : 1

17. Color Difference Signal ADC Input Level Adjustment ([F] DIGITAL-22 C.B)

Oscilloscope : CN3 pin ③ (AD V)

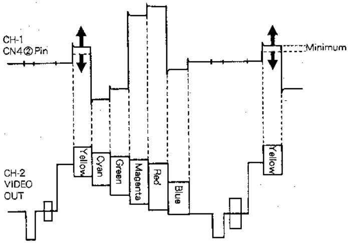
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR2 so that the amplitude from cyan to red of the waveform is as shown in the figure below.


Red
820 ± 20mV
[920 ± 20mV]
Cyan

18. PAL Tint Adjustment ([F] DIGITAL-22 C.B)

Oscilloscope : CH-1 : CN4 pin ② (V)
CH-2 : VIDEO OUT

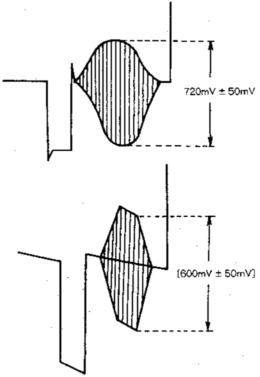
1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL.
3) Adjust SFR4 so the variation in the yellow is minimum as shown in the figure below.


CH-1
CN4② Pin
Minimum
CH-2
VIDEO
OUT
Yellow
Cyan
Green
Magenta
Red
Blue
Yellow

19. Chroma Output Level Adjustment ([F] DIGITAL-22 C.B)

Oscilloscope : BT2 pin ⑪ (DIG V)

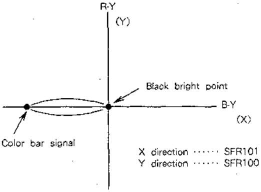
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR5 so that the color burst level is 720 ± 50mV [600 ± 50mV].


720mV ± 50mV
[600mV ± 50mV]

20-1. Color Difference A/D Input Offset Adjustment ($\boxed{E}$ DIGITAL-21 C.B)

Vectorscope (PAL) : VIDEO OUT

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58 and the CONV switch to PAL.
3) Set the gain of the vectorscope to maximum and adjust SFR100 and SFR101 so that the black bright point comes to the center of the X-Y axis.

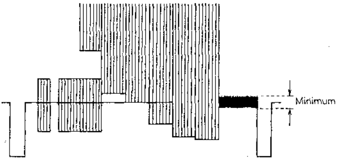


20-2. Color-Difference A/D Input Offset Adjustment ($\boxed{E}$ DIGITAL-21 C.B)

Simplified adjustment

Oscilloscope : CN2 pin ⑪ (DIG V)

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR100 and 101 so the carrier is minimum in the black level as shown in the figure below.



SERVICE MODES

1. Start of Service Modes

1) After turning the power on, short pins ③ and ⑨ of BT901 on the front circuit board.
2) Each time these pins are shorted, the service mode alternates between ① and ②.
3) Discriminate service mode ① or ② as follows.
   Service mode 1···The SYSTEM LED goes off.
   Service mode 2···The SYSTEM LED lights.

2. Service Mode 1

The system indicatin LEDs show the errors in the mechanism state. (See Table 1)

LED / Error	PAL	MESECAM	NTSC 3.58	NTSC 4.43
Loading	1	0	0	0
Unloading	0	1	0	0
Threading	1	1	0	0
Unthreding	0	0	1	0
Mechanism intialized	1	0	1	0
Leader tape treatment	0	1	1	0
Drum (RF SWP)	1	1	1	0
Reel (REEL S)	0	0	0	1
Mechanism position	1	0	0	1
Normal	0	0	0	0

Table 1

3. Service Mode 2

The following sensor inputs are disabled in this mode. IC201 (MB88515B) on the Servo circuit board.

Pin (55) : TOP SENSOR
Pin (56) : END SENSOR
Pin (57) : RF SWP
Pin (58) : REEL SENSOR

PRACTICAL SERVICE FIGURE

Output Level

Video (Impedance) : 1.0Vp-p
(75 Ω, Unbalance)
Audio (Impedance) : − 8dBs (Less then 3.3k Ω)
RF Modulated (Impedance) :
73dB μ V (75 Ω, Unbalance)
30CH~39CH (G/K/I Signal)

Input Level

Video (Impedance) : 0.5~2.0Vp-p
(75 Ω, Unbalance)
Audio : − 8dBs

S/N Ratio

Video (SP mode) : 42dB
Audio (SP mode) : More than 40dB

Audio Frequency Response: 200Hz~8kHz (NTSC SP)
[SP mode, Test tape, 200Hz~6kHz (PAL SP)
A-BEX TPV-160S (PAL),
A-BEX TNV-160S (NTSC)]

Horizontal Resolution: More than 230 Lines
(Test tape TTV-P6) (PAL/MESECAM SP)
More than 220 Lines
(NTSC SP)

Tape speed: NTSC : 33.35mm/sec (SP)
16.67mm/sec (LP)
11.12mm/sec (EP)
PAL/MESECAM : 23.39mm/sec (SP)
11.70mm/sec (LP)

Wow & Flutter: Less than 0.4 %
(Test tape T-120 DIN WTD)

F. F time: Less than 300sec (T-120)

REW time: Less than 300sec (T-120)

Back tension: 46.5 ± 12g-cm

Loading: Less than 3sec

Unloading: Less than 3.5sec

MECHANICAL ADJUSTMENT

1. Preparation for Tape Transport Adjustment (See Figure – 1)
   1) Lift the Main circuit board and insert it between the ribs as shown in the figure.
   2) Solder test pins to CN401 pin ④ and IC201 pin ⑩ on the Main circuit board so that an osilloscope can be connected to them.

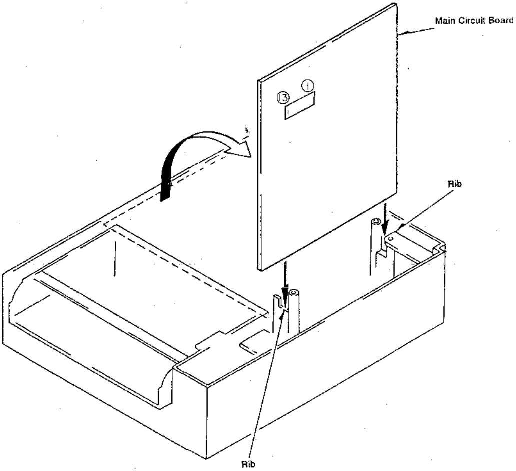
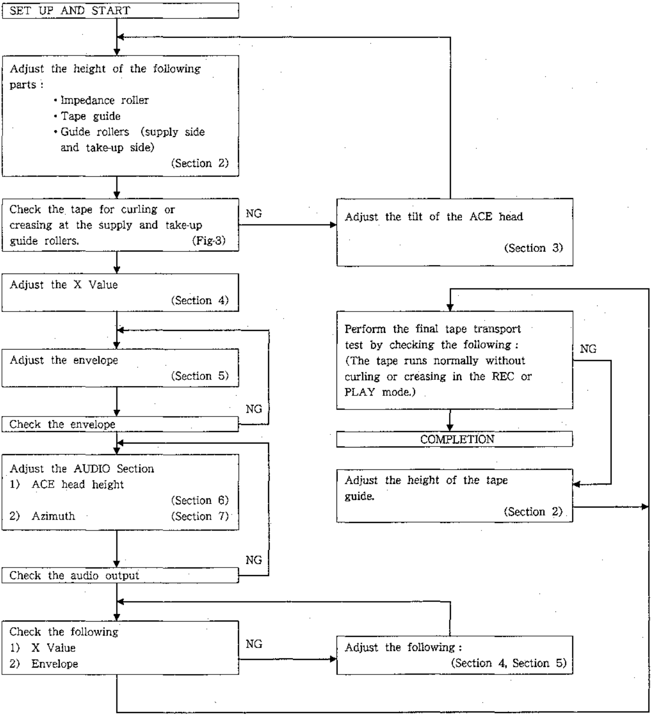


Fig – 1

2. TAPE TRANSPORT ADJUSTMENT FLOWCHART


SET UP AND START
Adjust the height of the following parts :
• Impedance roller
• Tape guide
• Guide rollers (supply side and take-up side)
(Section 2)
Check the tape for curling or creasing at the supply and take-up guide rollers. (Fig-3)
NG
Adjust the tilt of the ACE head
(Section 3)
Adjust the X Value
(Section 4)
Adjust the envelope
(Section 5)
NG
Check the envelope
Adjust the AUDIO Section
1) ACE head height
(Section 6)
2) Azimuth (Section 7)
NG
Check the audio output
Check the following
1) X Value
2) Envelope
NG
Adjust the following :
(Section 4, Section 5)
Perform the final tape transport test by checking the following :
(The tape runs normally without curling or creasing in the REC or PLAY mode.)
NG
COMPLETION
Adjust the height of the tape guide.
(Section 2)

3. TAPE RUNNING POSITION ADJUSTMENT

(GUIDE ROLLER/TAPE GUIDE/IMPEDANCE ROLLER)

Set – up

Lift the "Main circuit board".

1. Perform the height adjustment for the following items to obtain the proper tape running position. (See Figure – 1)
   ① Impedance roller
   ② Guide roller (Supply side)
   ③ Guide roller (Take – up side)
   ④ Tape guide

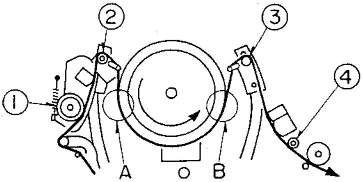


Fig – 1

2. Load a blank tape and set it to the PLAY mode. Check the tape transport at points A and B as shown in Figure – 1.

3. Operate it between the PLAY and STOP modes several times.

4. Observe the tape transport at the lead surface of the cylinder during the PLAY mode, and confirm that the tape runs smoothly along the lead surface of the cylinder without slipping downward or upward. (See Figure – 2)

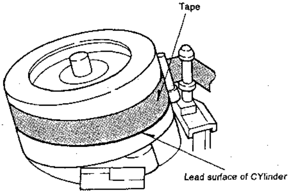


Fig – 2

6. ENVELOPE WAVE FORM ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
MAIN C.B CN401 ④ pin MAIN C.B CN401 ⑩ pin	Oscilloscope	PLAY (SP) MODE Test tape TTV-N1E or TTV-P1L

ADJ. Location	ADJ. Value
Guide rollers	Maximum level and correct wave form (PB Y FM Signal)

TEST EQUIPMENT CONNECTING DIAGRAMS

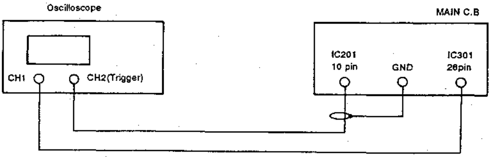


Fig - 10

1. Connect equipment as shown in Figure - 10.

2. Playback the test tape TTV-N1E or TTV-P1L.

3. The envelope wave form can be performed by adjusting the height of both the supply side and take-up side "Guide rollers". Finaly adjust the height of "Guide rollers" so that the envelope wave form is as flat as possible.

4. Manual tracking to its center position and confirm that a nearly maximum level is obtained.
   Then push the tracking switch in both directions while adjusting the height of "Guide rollers", in order to obtain the envelope waveform which is as flat as possible.
   If the tape is above or lower the helical tape position, the envelope waveforms will take the shape as shown in Figure - 11 and Figure - 12.

5. Adjust for maximum flatness of the envelope wave form according to the Figure - 11 and Figure - 12.

6. After adjustment, variable in the ▲ or ▼ tracking by the remote control, and check that the waveform changes symmetrically.

7. Check the tape curl. (Refer to Section 2)

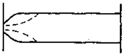
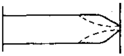
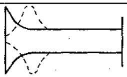
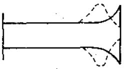
	Tape is too high	
	Supply side	Take-up side
When the tracking volume is variable in the ▲ and ▼ directions.		
		
Adjustment	Supply side "Guide roller" variable in the ▲ direction (lowers "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the ▲ direction (lowers "Guide roller") to flatten envelope.

Fig – 11

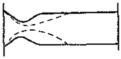
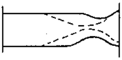
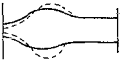
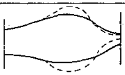
	Tape is too low	
	Supply side	Take-up side
When the tracking volume is variable in the ▲ and ▼ directions.		
		
Adjustment	Supply side "Guide roller" variable in the ▼ direction (raises "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the ▼ direction (raises "Guide roller") to flatten envelope.

Fig – 12

7. ACE HEAD HEIGHT／ACE HEAD TILT ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV – N1 or TTV – P1

ADJ. Location	ADJ. Value
Height adjustment nut Azimuth adjustment screw	Maximum level (AC voltmeter)
Tilt adjustment screw	

TEST EQUIPMENT CONNECTING DIAGRAMS

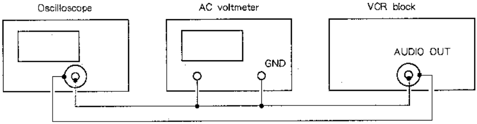


Fig – 13

1. Connect equipment as shown in Figure – 13.

2. Confirm that the running between the "Take – up guide roller" and the "ACE head" has no slack. If the tape has slack, take it up by turning the "Ⓒ Tilt adjustment screw". (See Figure – 15)
   Then readjust "Guide roller" height in section 2 and the "X value" in section 4.

3. After confirming on the oscilloscope that a 1kHz audio signal is being output by playing back TTV – N1 or TTV – P1 test tape,
   adjust the "Ⓐ Height adjustment nut" so that the AC voltmeter's reading is brought to its maximum level.
   (See Figure – 15)

4. Adjust the "Ⓑ Azimuth adjustment screw" so that the AC voltmeter's reading is brought to its maximum level.
   (See Figure – 15)

8. ACE HEAD AZIMUTH ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV – N2 or TTV – P2

ADJ. Location	ADJ. Value
Azimuth adjustment screw	Maximum level (AC voltmeter)

Fig – 14

TEST EQUIPMENT CONNECTING DIAGRAMS

See Figure – 13.

1. After confirming on the oscilloscope that a 7kHz audio signal is being output by playing back TTV – N2 or TTV – P2 test tape, adjust the "ⒷAzimuth adjustment screw" so that the AC voltmeter's reading or oscilloscope wave form is brought to its maximum level. (See Figure – 15)

Note : Fix the screw Ⓑ and Ⓒ with lock paint after readjustment.

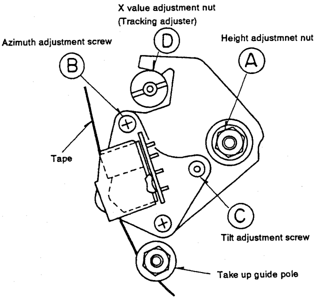
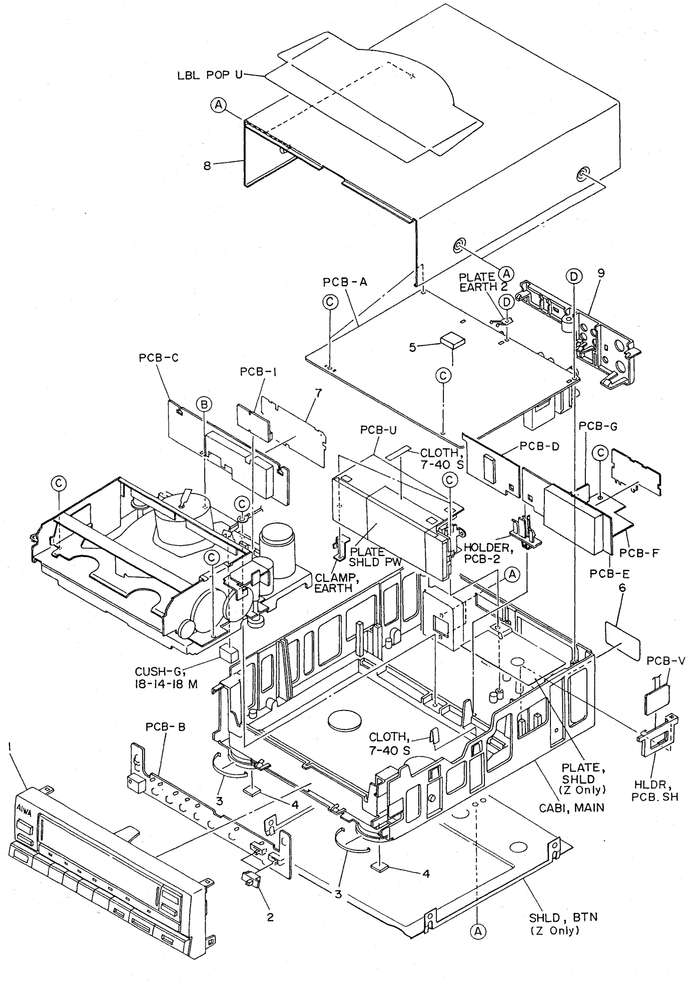

X value adjustment nut
(Tracking adjuster)
D
Azimuth adjustment screw
B
Height adjustmnet nut
A
Tape
C
Tilt adjustment screw
Take up guide pole

Fig – 15

MECHANICAL EXPLODED VIEW – 1/1

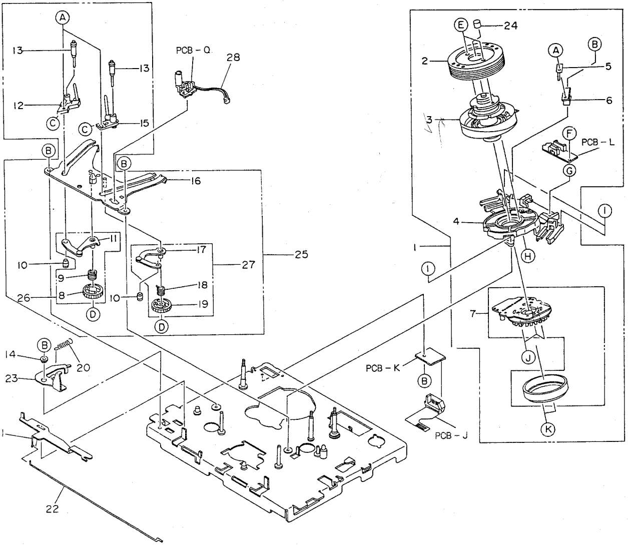

LBL POP U
Ⓐ
8
PCB-A
Ⓒ
PLATE EARTH 2
Ⓐ
Ⓓ
Ⓓ
9
5
Ⓒ
PCB-C
PCB-1
7
Ⓑ
PCB-U
CLOTH, 7-40 S
PCB-D
PCB-G
Ⓒ
Ⓒ
Ⓒ
Ⓒ
Ⓒ
PLATE SHLD PW
CLAMP, EARTH
HOLDER, PCB-2
PCB-F
PCB-E
Ⓐ
6
CUSH-G, 18-14-18 M
PCB-V
PCB-B
1
CLOTH, 7-40 S
3
4
PLATE, SHLD (Z Only)
HLDR, PCB.SH
CABI, MAIN
4
3
2
SHLD, BTN (Z Only)
Ⓐ

MECHANICAL PARTS LIST－1／1

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	09-057-184-010		CABI, FRONT ASSY
2	80-JUB-008-119		KNOB, SLIDE
3	89-JU9-040-119		PLATE FOOT, S
4	81-JUK-045-019		FELT, FOOT 8-8
5	82-JUF-202-019		CUSH, 15-15-5
6	82-JUF-015-019		PLATE, SPEC ZNM〈Z〉
7	89-JU9-202-010		SHLD RP2.5
8	89-JU9-039-019		CAB STEEL, S
9	82-JUF-006-019		PLATE, REAR ZNM
A	87-067-660-019		BVT2+3-8W/O SLOT BLK
B	87-067-189-019		BVIT3B+2.6-8
C	87-067-680-019		BVIT3B+3-10
D	87-067-758-019		BVT2+3-12(W/O SLOT)

VIDEO MECHANISM EXPLODED VIEW – 1/6



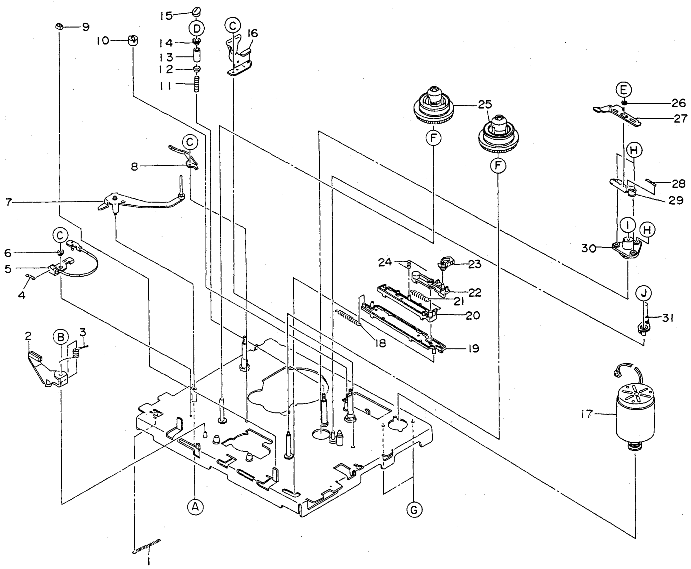
VIDEO MECHANISM PARTS LIST – 1/6

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF NO.	PART NO.	DESCRIPTION
1	S8-059-825-0A0	CYLINDER ASSY
2	S8-059-010-180	UPPER DRUM TPA3-012
3	S8-059-013-040	LOWER DRUM ASSY
4	S8-059-010-010	CYLINDER MOUNT
5	S8-059-010-540	DRUM EARTH
6	S8-059-010-020	DRUM EARTH BRACKET
7	S6-004-030-240	MOTOR TM85
8	S8-059-030-060	T LOADING GEAR L
9	S8-059-030-080	LOADING GEAR SPRING L
10	S8-059-030-140	LOADING BOSS
11	S8-059-035-020	LOADING PLATE L SEMI ASSY
12	S8-059-030-040	LOADING BLOCK L
13	S8-000-030-370	ROLLER POST ST
14	S8-059-060-180	COLLAR
15	S8-059-030-050	LOADING BLOCK R
16	S8-059-035-010	LOADING BASE SEMI ASSY
17	S8-059-035-030	LOADING PLATE R SEMI ASSY
18	S8-059-030-090	LOADING GEAR SPRING R
19	S8-059-030-070	T LOADING GEAR R
20	S8-059-130-140	REC LEVER SPRING
21	S8-059-130-070	REC ACTUATOR
22	S8-059-130-110	REC ACTUATE SPOKE
23	S8-059-130-060	REC LEVER
24	S8-059-010-260	DRUM EARTH
25	S8-059-033-010	LOADING BASE ASSY

REF NO.	PART NO.	DESCRIPTION
26	S8-059-033-020	LOADING GEAR L ASSY
27	S8-059-033-030	LOADING GEAR R ASSY
28	S8-059-133-030	LAMP ASSY
29	S8-059-010-070	CONNECTOR BRACKET
A	S9-665-000-000	CUP SCRW 2.6X3
B	S9-192-000-000	C TAPPING SCREW 2.6X5
C	S9-C17-202-730	SCREW CAMERA
D	S9-884-000-000	PW CUT 2.6X6X0.5
E	S9-972-000-000	BIND TAMS SCREW 3X8
F	S9-973-000-000	W TAMS SCREW 2.6X6
G	S9-715-000-000	WASHER 2.6
H	S9-999-180-180	TAPPING SCREW
I	S9-205-000-000	C TAPPING SCREW 3X10
J	S9-055-000-000	SCREW 2.6X20
K	S9-999-200-350	COLLAR SCREW

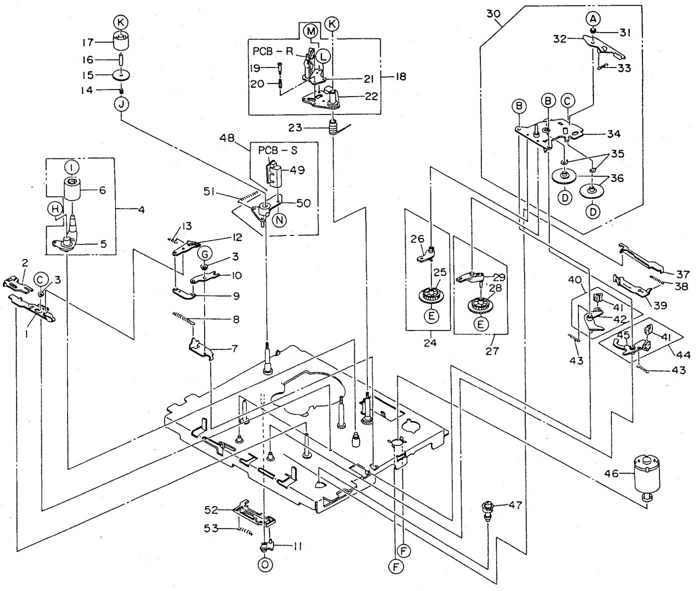
VIDEO MECHANISM EXPLODED VIEW – 2/6



VIDEO MECHANISM PARTS LIST – 2/6

REF NO.	PART NO.	DESCRIPTION
1	S8-059-080-200	BT ACTUATE PLATE SPRING
2	S8-059-103-040	S SOFT BRAKE ASSY
3	S8-059-100-220	S SOFT BRAKE SPRING
4	S8-059-080-170	BAND HOLDER SPRING
5	S8-059-083-020	BT BAND ASSY
6	S8-059-080-150	BAND HOLDER COLLAR
7	S8-059-085-010	BT ARM SEMI ASSY
8	S8-059-080-090	BACK TENSION SUPPORT
9	S8-059-020-230	DAMPER RUBBER
10	S8-059-020-290	TRACKING ADJUSTER
11	S8-059-020-260	TAPE GUIDE SPRING
12	S8-000-030-290	TAPE GUIDE FLANGE D
13	S8-000-030-140	TAPE GUIDE
14	S8-000-032-8A0	TAPE GUIDE FLANGE C
15	S8-000-030-190	GUIDE CAP
16	S8-059-023-010	OPEN ANGLE ASSY
17	S8-059-073-020	CAPSTAN MOTOR ASSY
18	S8-059-100-100	BRAKE ACTUATE BASE SPRING
19	S8-059-100-090	BRAKE ACTUATE BASE
20	S8-059-100-110	BRAKE PLATE
21	S8-059-100-120	BRAKE PLATE SPRING
22	S8-059-100-130	TRIGGER LEVER
23	S8-059-100-140	TRIGGER HOOK
24	S8-059-100-230	TRIGGER LEVER SPRING
25	S8-059-053-010	REEL ASSY
26	S8-059-170-100	RG SLIDE PLATE COLLAR
27	S8-059-170-030	RG SLIDE PLATE
28	S8-059-170-110	RG SLIDE SPRING
29	S8-059-170-090	RG SLIDE BASE
30	S8-059-073-010	METAL HOUSING ASSY
31	S8-059-175-020	RG ARM SEMI ASSY
A	S9-999-030-150	PW CUT 2.1X4X0.5
B	S9-876-000-000	PW CUT 2.1X5X0.5
C	S9-191-000-000	C TAPPING SCREW 2.6X4
D	S9-453-000-000	NUT 3.0
E	S9-077-000-000	TAMS SCREW 2X4
F	S9-969-000-000	D WASHER 3.1X6X0.6
G	S9-105-000-000	TAMS SCREW 3X4
H	S9-195-000-000	C TAPPING SCREW 2.6X8
I	S9-999-060-030	NYLON WASHER 2.92X5X0.5
J	S9-884-000-000	PW 2.6X6X0.5 CUT

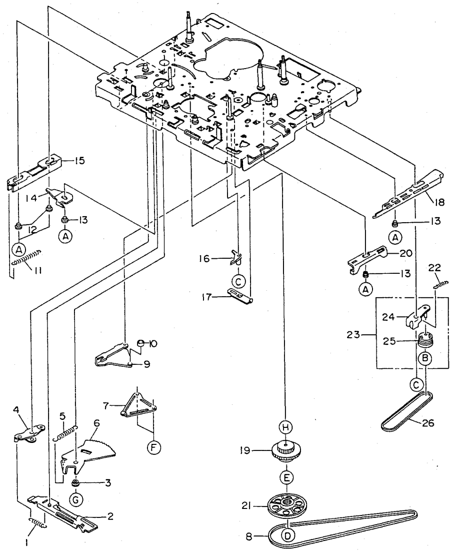
VIDEO MECHANISM EXPLODED VIEW – 3/6



VIDEO MECHANISM PARTS LIST – 3/6

REF NO.	PART NO.	DESCRIPTION
1	S8-059-060-240	P SLIDE PLATE A
2	S8-059-060-250	P SLIDE PLATE B
3	S8-059-060-180	COLLAR
4	S8-059-063-010	PINCH ROLLER ARM ASSY
5	S8-059-065-010	PINCH ROLLER ARM SEMI ASSY
6	S8-000-090-220	PINCH ROLLER A
7	S8-059-060-190	P ANGLE HOLDER
8	S8-059-060-200	P-SPRING, ROLLER
9	S8-059-060-060	JOINT PLATE
10	S8-059-060-050	P ACTUATE ANGLE
11	S8-059-040-110	FE ACTUATE LEVER
12	S8-059-060-040	P ACTUATE ARM
13	S8-059-060-090	P-SPRING, ACTUATE ARM
14	S8-059-040-090	TAPE GUIDE FLANGE SPRING
15	S8-059-040-070	TAPE GUIDE FLANGE A
16	S8-059-040-060	IMPEDANCE ROLLER SLEEVE
17	S8-059-040-050	IMPEDANCE ROLLER
18	S8-059-043-080	HEAD BASE ASSY
19	S8-000-060-260	AZIMUTH SPRING SCREW
20	S8-000-060-040	AZIMUTH SPRING
21	S6-204-150-060	ACE HEAD HV224206
22	S8-059-045-020	HEAD BASE SEMI ASSY
23	S8-059-040-150	HEAD SPRING
24	S8-059-093-140	P GEAR ASSY
25	S8-059-092-0A0	PLAY GEAR
26	S8-059-093-030	P GEAR ARM ASSY
27	S8-059-093-150	RF GEAR ASSY
28	S8-059-092-2A0	FF GEAR
29	S8-059-093-040	RF GEAR ARM ASSY
30	S8-059-093-160	SUB PLATE ASSY
31	S8-059-100-070	T SOFT BRAKE ARM COLLAR
32	S8-059-103-030	T SOFT BRAKE ASSY
33	S8-059-100-060	T-SPRING, SOFT BRAKE ARM
34	S8-059-095-010	SUB PLATE SEMI ASSY
35	---	WAVE WASHER
36	S8-059-090-6A0	REEL DRIVE GEAR
37	S8-059-100-160	BRAKE LIFTER
38	S8-059-100-180	L BRAKE ACTUATOR SPRING
39	S8-059-100-170	L BRAKE ACTUATOR
40	S8-059-103-010	S BRAKE ARM ASSY
41	S8-059-100-190	BRAKE SHOE
42	S8-059-100-010	S BRAKE ARM
43	S8-059-100-020	BRAKE ARM SPRING
44	S8-059-103-020	T BRAKE ARM ASSY
45	S8-059-100-030	T BRAKE ARM
46	S8-059-113-010	LOADING MOTOR ASSY
47	S8-059-113-020	TRIGGER BEARING ASSY
48	S8-059-043-020	FE PLATE ASSY
49	S6-204-150-030	FE HEAD HV113006
50	S8-059-040-040	FE PLATE
51	S8-059-040-080	FE PLATE SPRING
52	S8-059-040-100	FE SLIDE PLATE
53	S8-059-040-120	FE ACTUATE SPRING
A	S9-974-000-000	SL FH SCREW 2X3
B	S9-077-000-000	TAMS SCREW 2X4
C	S9-192-000-000	C TAPPING SCREW 2.6X5
D	S9-500-000-000	E RING S1.5
E	S9-743-000-000	PW CUT 1.6X3.8X0.3
F	S9-105-000-000	C TAPPING SCREW 3X4
G	S9-096-000-000	TAMS SCREW 2.6X4
H	S9-999-030-110	PW CUT 5X8X0.5
I	S9-038-000-000	SCREW 2.6X4
J	S9-337-000-000	PLANE WASHER 3X8X0.5
K	S9-953-000-000	NYLON NUT M3
L	S9-999-200-250	SCREW 3X6(SHAPE TYPE)
M	S9-705-000-000	LONG LOCK SCREW 2.6X7
N	S9-114-000-000	FLANGE BIND 2X3
O	S9-876-000-000	PW CUT 2.1X5X0.5

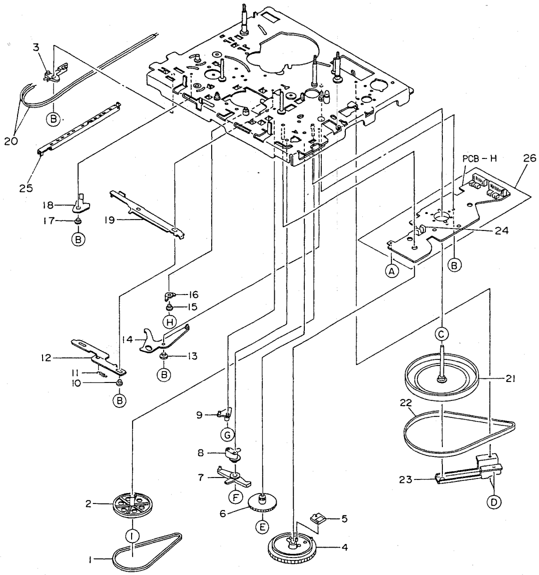
VIDEO MECHANISM EXPLODED VIEW – 4/6



VIDEO MECHANISM PARTS LIST – 4/6

REF NO.	PART NO.	DESCRIPTION
1	S8-059-120-050	LOADING ACTUATOR SPRING
2	S8-059-125-030	LOADING ACTUATOR SEMI ASSY
3	S8-059-120-100	L GEAR PLATE COLLAR
4	S8-059-125-020	LOADING ACTUATE LVR SEMI ASSY
5	S8-059-120-120	L GEAR PLATE SPRING
6	S8-059-120-090	L GEAR PLATE
7	S8-059-120-110	LOADING LEVER REINFORCE PLATE
8	S8-059-090-170	DRIVE BELT
9	S8-059-125-010	LOADING LEVER SEMI ASSY
10	S8-059-120-130	CAM ROLLER
11	S8-059-080-130	BACK TENSION SPRING
12	S8-059-080-210	BT ACTUATE PLATE COLLAR
13	S8-059-060-180	COLLAR
14	S8-059-080-180	BT ACTUATE LEVER
15	S8-059-080-190	BT ACTUATE PLATE
16	S8-059-170-010	RG ACTUATE ARM
17	S8-059-170-020	ORG ACTUATE
18	S8-059-150-070	L BRAKE PLATE
19	S8-059-093-100	CLUTCH ASSY
20	S8-059-150-080	EJECT ACTUATOR
21	S8-059-093-010	MIDDLE PULLEY ASSY
22	S8-059-150-110	IDLER ARM SPRING
23	S8-059-153-030	E IDLER ARM ASSY
24	S8-059-155-020	E IDLER ARM SEMI ASSY
25	S8-059-150-150	EJECT PULLEY
26	S8-059-150-060	FL BELT
A	S9-192-000-000	C TAPPING SCREW 2.6X5
B	S9-743-000-000	PW CUT 1.6X3.8X0.3
C	S9-876-000-000	PW CUT 2.1X5X0.5
D	S9-884-000-000	PW CUT 2.6X6X0.5
E	S9-999-060-040	NYLON WASHER 2.98X6X0.3
F	S9-078-000-000	TAMS SCREW 2X5
G	S9-203-000-000	C TAPPING SCREW 3X6
H	S9-W03-301-800	NYLON WASHER 3.3X6X0.3
I	S9-876-000-000	PW CUT 2.1X5X0.5

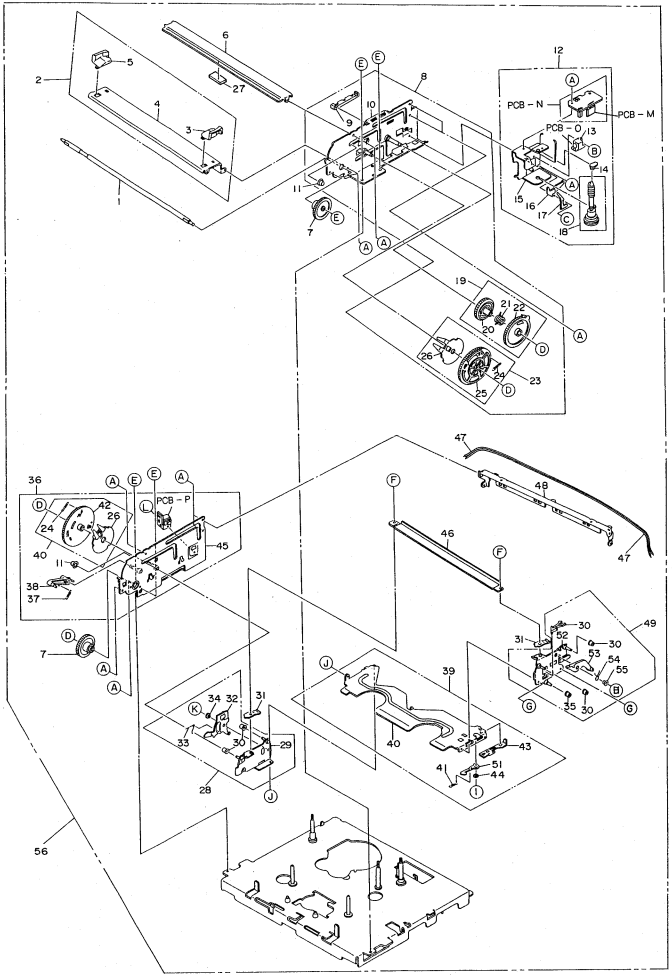
VIDEO MECHANISM EXPLODED VIEW – 5/6



VIDEO MECHANISM PARTS LIST – 5/6

REF NO.	PART NO.	DESCRIPTION
1	S8-059-110-060	LOADING BELT
2	S8-059-110-030	LOADING PULLEY
3	S6-401-011-770	LEAF SWITCH MCV-00321 MVDO
4	S8-059-110-010	LOADING CAM
5	S8-059-110-020	S BRUSH
6	S8-059-110-040	LOADING GEAR
7	S8-059-110-140	EJECT ARM
8	S8-059-110-130	BRAKE ACTUATE ARM
9	S8-059-110-120	SEARCH ARM B
10	S8-059-060-110	P SLIDER COLLAR
11	S8-059-060-230	P-SPRING SLIDER
12	S8-059-060-100	P SLIDER
13	S8-059-060-170	P CAM LEVER COLLAR
14	S8-059-065-020	P CAM LEVER SEMI ASSY
15	S8-059-060-130	P CRANK COLLAR
16	S8-059-060-120	P CRANK
17	S8-059-060-180	COLLAR
18	S8-059-080-230	BT RETURN LEVER
19	S8-059-080-100	BT CHANGE PLATE
20	---	WIRE
21	S8-059-070-140	FLYWHEEL CAPSTAN
22	S8-059-070-100	MAIN BELT
23	S8-059-073-030	FL ANGLE ASSY
24	S6-808-080-030	REEL SENSOR
25	---	WIRE HOLDER
26	S8-059-133-020	BASE PLATE ASSY
A	S9-803-000-000	S TAPPING SCREW 2.6X5
B	S9-192-000-000	C TAPPING SCREW 2.6X5
C	S9-912-000-000	PW 3.1X6X0.5
D	S9-202-000-000	C TAPPING SCREW 3X5
E	S9-876-000-000	PW CUT 2.1X5X0.5
F	S9-999-030-100	PW CUT 2.6X8X0.5
G	S9-884-000-000	PW CUT 2.6X6X0.5
H	S9-999-180-100	C TAPPING FH SCREW 2.6X4
I	S9-999-700-140	HL WASHER CUT 1.7X4X0.3

VIDEO MECHANISM EXPLODED VIEW – 6/6



VIDEO MECHANISM PARTS LIST – 6/6

REF NO.	PART NO.	DESCRIPTION
1	S8-059-160-600	SYNCHRONIZE SHAFT
2	S8-059-163-070	FRONT ANGLE ASSY
3	S8-059-160-250	TAPE GUIDE R
4	S8-059-160-180	FRONT ANGLE
5	S8-059-160-240	TAPE GUIDE L
6	S8-059-160-660	UPPER PLATE
7	S8-059-160-170	SYNCHRONIZE GEAR A
8	S8-059-163-390	FRAME R ASSY
9	S8-000-220-260	OPEN LEVER GUIDE
10	S8-059-165-070	FRAME R SEMI ASSY
11	S8-000-220-240	GUIDE SLEEVE
12	S8-059-163-180	C LOAD BRACKET ASSY
13	---	SENSOR P.C.B RM ASSY
14	S8-059-160-060	F WORM BEARING A
15	S8-059-165-060	C LOAD BRACKET SEMI ASSY
16	S8-059-160-340	IN SW LEVER
17	S8-059-160-330	S SW LEVER
18	S8-059-163-190	F LOADING CLUTCH ASSY
19	S8-059-163-210	WORM WHEEL ASSY
20	S8-059-160-450	FRICTION GEAR
21	S8-059-160-310	FRICTION SPRING
22	S8-059-160-360	WORM WHEEL
23	S8-059-163-120	LIFT GEAR R ASSY
24	S8-000-220-450	LP SPRING
25	S8-000-220-150	LIFT GEAR R
26	S8-000-220-110	LIFT ARM
27	S8-059-160-720	DAMPER MAT
28	S8-059-163-090	SIDE PLATE L ASSY
29	S8-059-165-030	SIDE PLATE L SEMI ASSY
30	S8-000-220-750	GUIDE ROLLER
31	S8-059-160-280	CASSETTE PUSH PLATE
32	S8-000-220-660	C LOCK PLATE L
33	S8-059-160-300	LOCK PLATE SPRING L
34	S8-000-190-630	LOCK PLATE COLLAR
35	S8-000-220-230	GUIDE ROLLER
36	S8-059-163-380	FRAME L ASSY
37	S8-059-160-680	LIFT LEVER SPRING
38	S8-059-160-670	LIFT LEVER
39	S8-059-163-060	CASSETTE HOLDER ASSY
40	S8-000-220-030	CASSETTE HOLDER
41	S8-059-160-290	LOCK SPRING
42	S8-000-220-140	LIFT GEAR L
43	S8-000-220-130	SLIDE PLATE
44	S8-059-060-180	COLLAR
45	S8-059-165-080	FRAME L SEMI ASSY
46	S8-000-220-650	TOP STAY
47	---	END SENSOR WIRE
48	S8-059-160-090	REAR ANGLE
49	S8-059-163-080	SIDE PLATE R ASSY
50	S8-000-220-160	LOCK RELEASE LEVER
51	S8-000-220-120	C LOCK PLATE A
52	S8-059-165-020	SIDE PLATE R SEMI ASSY
53	S8-000-220-250	OPEN LEVER
54	S8-000-220-440	OPEN LEVER SPRING
55	S8-000-220-420	OPEN LEVER COLLAR
56	S8-059-163-370	FRONT LOADING ASSY
A	S9-096-000-000	TAMS SCREW 2.6X4
B	S9-078-000-000	TAMS SCREW 2X5
C	S9-743-000-000	PW CUT 1.6X3.8X0.3
D	S9-504-000-000	E RING S2.5
E	S9-192-000-000	C TAPPING SCREW 2.6X5
F	S9-833-000-000	SCREW 2.3X2
G	S9-556-000-000	SCREW 2.6X3
H	S9-967-000-000	SL SCREW 2X4
I	S9-968-000-000	SL SCREW 2.6X3
J	S9-991-000-000	SCREW 2.3X2.5
K	S9-966-000-000	SL SCREW 2X2.5
L	S9-099-000-000	TAMS SCREW 2.6X7

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
ｻｰｼﾞｻﾌﾟﾚｯｻ	SERGESUPPRESSOR
ｾﾗｺﾝ	CAP, CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTORL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOADING MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ｼﾞｸｱｰﾑ	ARM, SHAFT
ｼﾞｸｶﾞｲﾄﾞ	GUIDE, SHAFT
ｽﾄﾗｯﾌﾟ	STRAP
ﾄｸﾅﾍﾞ	S-SCRW
ﾋﾝｼﾞ	HINGE
ﾋﾝｼﾞﾋﾞｽ	S-SCRW
ﾋﾞｽｾﾚｰﾄ	SCRW, SERRART

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	82-JUF-914-019		IB, KNM〈K〉
2	82-JUF-915-019		IB, ZNM〈Z〉
3	87-050-033-019		AC CORD SET ASSY, K3P〈K〉
4	87-050-036-010		AC CORD SET ASSY, Z〈Z〉
5	87-050-037-010		CORD, RF PAL Z〈Z〉
6	87-034-796-019		CORD, RF PAL S〈K〉
7	80-JUC-951-019		RC-TM110

サービス技術ニュース	
番号	連絡内容
G－　　－	
G－　　－	
G－　　－	

アイワ株式会社
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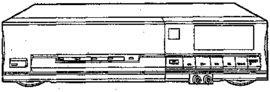
aiwa

V04575

HV - MG330S
HV - MG350S



VIDEO CASSETTE RECORDER

- BASIC VIDEO MECHANISM : TN – 5900N2LRN – 187
- TYPE. KE,DH (MG330S)
  K,Z (MG350S)

SERVICE MANUAL

S/M Code No. 09 – 939 – 034 – 001

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SPECIFICATIONS

MG330KE, DH

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head

Video signal
PAL/MESECAM color signal, 625 lines, 50 fields
NTSC$_{3.58}$/NTSC$_{4.43}$ color signal, 525 lines, 60 fields

Recording time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
NTSC: 3 hours max. with T-180 tape (SP)

Playback time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)

Fast forward/rewind time
Less than 300 sec. with E-180 tape

Tape speed
PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)

Tape width
12.65 mm

Usable cassette
VHS video cassette

Timer display
24-hour cycle (am, pm), day, hour, minute, digital fluorescent display

Timer recording
6 programs within 2 weeks
1 program for weekly recording

Channel coverage

Model	System	Band	Channel range
KE	B/G D/K	L (VHF low)	R1 – R5
		H (VHF high)	R6 – R12
		U (UHF)	E21 – E69
DH	D/K	L (VHF low)	C1 – C5
		H (VHF high)	C6 – C12
		U (UHF)	C13 – C57
	I	L (VHF low)	E2 – E4
		H (VHF high)	E6 – E12
		U (UHF)	E21 – E69

RF output
UHF channel between 30 and 39

RF output level
75 dB ±3 dB

Video input
0.5 – 2.0 Vp-p, 75 ohms unbalanced

Video output
1.0 Vp-p, 75 ohms unbalanced

Horizontal resolution
PAL/MESECAM:
230 lines (nominal)
NTSC: 220 lines (nominal)

Video S/N (luminance)
42 dB (nominal)

Audio input
–8 dBs (nominal)/47 ohms unbalanced

Audio output
–8 dBs ± 3 dB,
3.3 kohms unbalanced

Audio frequency response
200 Hz – 8 kHz ± 4 dB (NTSC SP)
200 Hz – 6 kHz ± 4 dB (PAL SP)

Audio S/N
37 dB (NTSC SP nominal)

Operating temperature
5°C – 40°C

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
26 watts

Dimensions
380 (W) × 96 (H) × 328 (D) mm
(15 × 3$^7/_8$ × 13 inches)

Weight Approx. 5.2 kg (11 lb, 11 oz)

MG350K

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head

Video signal PAL/MESECAM color signal 625 lines, 50 fields
NTSC$_{3.58}$/NTSC$_{4.43}$ color signal 525 lines, 60 fields

Recording time
PAL/MESECAM: 4 hours 20 minutes max. with E-260 tape, standard speed
NTSC: 3 hours max. with T-180 tape, standard speed

Playback time PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)

Fast forward/rewind time
Less than 300 sec., with E-180 tape

Tape speed PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)

Tape width 12.65 mm

Usable cassette
VHS video cassette

Timer display 24-hour cycle, day, hour, minute, digital fluorescent display

Timer recording
6 programs within 2 weeks
1 program for weekly recording

Channel coverage

SYSTEM	VHF	UHF
B/G, D/K I	1A – S2 S3 – W	E21 – US83

RF output UHF channel between 30 and 39

RF output level
73 dB ±3 dB

Video input 0.5 – 2.0 Vp-p, 75 ohms unbalanced

Video output 1.0 Vp-p, 75 ohms unbalanced

Horizontal resolution
PAL/MESECAM: 230 lines (nominal)
NTSC: 220 lines (nominal)

Video S/N (luminance)
42 dB (nominal)

Audio input –8 dBs (nominal)/47 k ohms unbalanced

Audio output –8 dBs ± 3dBs
3.3 k ohms unbalanced

Audio frequency response
200 Hz – 8 kHz ±4 dB (NTSC SP)
200 Hz – 6 kHz ±4 dB (PAL SP)

Audio S/N 37 dB (NTSC SP nominal)

Operating temperature
5°C – 40°C

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
26 watts

Dimensions 380 (W) × 96 (H) × 328 (D) mm
(15 × $3^7/_8$ × 13 inches)

Weight Approx. 5.2 kg (11 lb 7 oz)

MG350Z

Recording/playback system
Video: Rotary 2 heads helical scan system
Audio: Fixed head

Video signal PAL/MESECAM color signal 625 lines, 50 fields
NTSC$_{3.58}$/NTSC$_{4.43}$ color signal 525 lines, 60 fields

Recording time
PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape standard speed
NTSC:
3 hours max. with T-180 tape, standard speed

Playback time PAL/MESECAM:
4 hours 20 minutes max. with E-260 tape (SP)
8 hours 40 minutes max. with E-260 tape (LP)
NTSC:
3 hours max. with T-180 tape (SP)
6 hours max. with T-180 tape (LP)
9 hours max. with T-180 tape (EP)

Fast forward/rewind time
Less than 300 sec., with E-180 tape

Tape speed PAL/MESECAM:
23.39 mm/sec. (SP)
11.70 mm/sec. (LP)
NTSC:
33.35 mm/sec. (SP)
16.67 mm/sec. (LP)
11.12 mm/sec. (EP)

Tape width 12.65 mm

Usable cassette
VHS video cassette

Timer display 24-hour cycle, day, hour, minute, digital fluorescent display

Timer recording
6 programs within 2 weeks
1 program for weekly recording

Channel coverage

System	Main regions	Channel range		
		VHF Low (CATV)	VHF High (CATV)	UHF
B/G	Western Europe (CCIR ch)	E2 – E4 (E2 – S1)	E5 – E12 (S2 – S20)	21 – 69
I	IRELAND U.K	A – C (A – C)	D – J (C2 – J)	21 – 69
D/K	Eastern Europe (OIRT ch) CHINA	R1 – R5 C1 – C5	R6 – R12 C6 – C12	C13 – C57

RF output UHF channel between 30 and 39

RF output level 70dB ± 3dB

Video input 0.5 – 2.0 Vp-p, 75 ohms, unbalanced

Video output 1.0 Vp-p, 75 ohms, unbalanced

Horizontal resolution
PAL/MESECAM: 230 lines (nominal)
NTSC: 220 lines (nominal)

Video S/N (luminance)
42 dB (nominal)

Audio input –8 dBs (nominal)/47 k ohms, unbalanced

Audio output –8 dBs ± 3 dB
3.3 k ohms, unbalanced

Audio frequency response
200 Hz – 8 kHz ± 4 dB (NTSC SP)
200 Hz – 6 kHz ± 4 dB (PAL SP)

Audio S/N 37 dB (NTSC SP nominal)

Operating temperature
5°C – 40°C

Power requirements
110 – 240 V AC, 50/60 Hz

Power consumption
26 watts

Dimensions 380 (W) × 96 (H) × 328 (D) mm
(15 × $3^7/_8$ × 13 inches)

Weight Approx. 5.2 kg (11 lb 7 oz)

- Design and specifications are subject to change without notice.

STANDARD MAINTENANCE

1. SERVICE SCHEDULE OF COMPONENT

○ : Check ● : Change

DECK		Periodic Service Schedule			
Ref. No.	Parts Name	1000 h	2000 h	3000 h	4000 h
2-2	UPPER DRUM	○	●	○	●
2-5	DRUM EARTH			●	
3-5	BT BAND ASSY		●		●
3-17	CAPSTAN MOTOR ASSY		●		●
3-25	REEL ASSY			●	
4-6	PINCH ROLLER A		●		●
4-21	ACE HEAD HV224206			●	
4-41	BRAKE SHOE		●		●
4-46	LM ASSY			●	
4-49	FE HEAD			●	
5-8	DRIVE BELT		●		●
5-19	CLUTCH ASSY		●		●
5-26	FL BELT		●		●
6-1	LOADING BELT		●		●
6-22	MAIN BELT		●		●

NOTE :

1. Clean all parts for the tape transport.
   Upper Drum with video head/Pinch Roller
   Audio Control Head
2. After cleaning up the parts, perform all DECK ADJUSTMENT.

2. CLEANING

1. Cleaning of "Video Head" (See Figure - 1)
   Head cleaning by using a chamois skin.

   - Procedure -
   1) Remove the "Cabinet, Steel".
   2) Put on a glove (thin type) to avoid touching the "Upper Drum" and "Lower Drum" with bare hand.
   3) Put a few drops of alcohol on the chamois skin, and by slightly placing it against the "Head Tip", allow the "Upper Drum" to turn the right and left.

   - Remark -
   1) The video head is of very hard material, but since it is very thin, avoid cleaning it vertically.
   2) Wait for the cleaned part to dry out, before operating the unit.
   3) Do not reuse stained chamois skin.

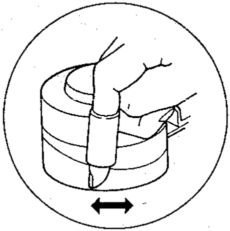


Fig. - 1

2. Cleaning of "ACE Head" (See Figure - 2)
   Head cleaning by using a chamois skin.

   - Procedure -
   1) Remove the "Cabinet, Steel".
   2) Put a few drops of alcohol on the chamois skin, clean up the "Audio Control Head", being careful not to damage the "Upper Drum" and other tape running parts.

   - Remark -
   1) Avoid cleaning "ACE Head" vertically.
   2) Wait for the cleaned part to dry well, before operating the unit.

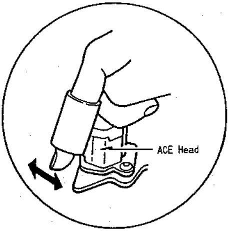


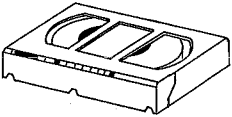
Fig. - 2

SERVICE JIG AND TOOLS

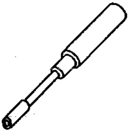
1. SERVICE JIG AND TOOLS

Ref. No.	Name	Adjustment
J-1	Torque Meter (FSJ-VHT-063)	Back Tension
J-2	Special Driver (SMALL)	Tape Running position, FM Envelope
J-3	Special Driver (LARGE)	X Value
J-4	Mirror	Tape Transportation Check
J-5	Alignment Tape (TTV-P2L, TTV-N2E)	X Value, FM Envelope
J-6	Alignment Tape (TTV-P1, TTV-N1)	ACE Head Height/ACE Head Tilt
J-7	Box Driver M3	Tape Running position, X Value, Envelope Wave Form
J-8	EXT. PCB. KIT [A] (Parts No. 09-054-012-010)	HA (For repair of circuit board)
J-9	Alignment Tape (TTV-P2, TTV-N2)	ACE Head Azimuth

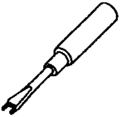
J－1, J－5, J－6, J－9



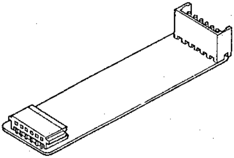
J－7



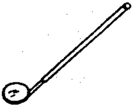
J－2, J－3



J－8



J－4



2. HOW TO ASSEMBLE THE JIGS

1. Assembling the J – 8. (See Figure – 1)

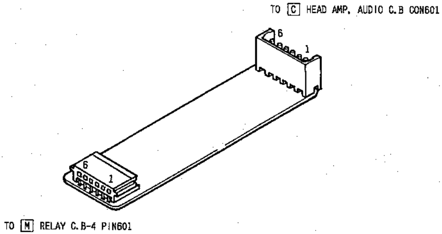

TO [C] HEAD AMP, AUDIO C.B CON601
6
1
6
1
TO [M] RELAY C.B-4 PIN601

Fig. – 1

Place the circuit board with the solder side down as shown in the figure above and assemble the connectors, taking care of their directions.

3. HOW TO USE THE JIGS

1. Using the J – 8 (See Figure – 1)

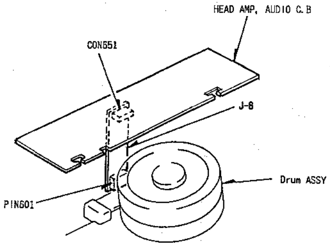

HEAD AMP, AUDIO C.B
CON551
J-8
Drum ASSY
PIN601

Fig. – 1

Use this jig when serving the "HEAD AMP. AUDIO C.B".

DISASSEMBLY INSTRUCTION

1. "Cabinet Front ASSY" Removal (See Figure – 1)
   1) Remove 4 screws (Ⓐ) holding the "Cabinet, Steel".
   2) Remove 8 screws (Ⓑ) holding the "Plate, Bottom".
   3) Remove 3 screws (Ⓒ) and releases 5 hooks to remove the "Cabinet Front ASSY" in the direction of the arrow.

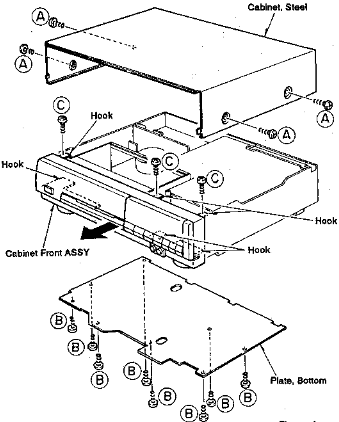

Ⓐ
Cabinet, Steel
Ⓐ
Ⓒ
Hook
Ⓐ
Ⓐ
Hook
Ⓒ
Ⓒ
Hook
Cabinet Front ASSY
Hook
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Ⓑ
Plate, Bottom

Fig. – 1

2. "Power Unit ASSY" and "Main C. B" Removal (See Figure – 2)
   1) Remove 6 screws (Ⓐ) holding the "Main C. B".
   2) Remove 2 screws (Ⓑ) and 2 screws (Ⓒ) holding the "Power Unit ASSY".

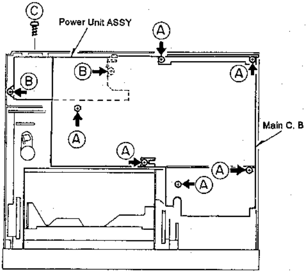

Ⓒ
Power Unit ASSY
Ⓐ
Ⓑ
Ⓐ
Ⓑ
Ⓐ
Ⓐ
Main C. B
Ⓐ
Ⓐ

Fig. – 2

3. "Mechanism ASSY" Removal (See Figure – 3)
   1) Remove screw (Ⓐ) and disconnect the connector to remove the "Preamp/Audio C. B" in the direction of the arrow .
   2) Remove 3 screws (Ⓑ) holding the "Mechanism ASSY".

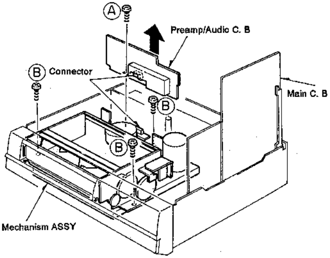

Ⓐ
Preamp/Audio C. B
Ⓑ Connector
Ⓑ
Main C. B
Ⓑ
Mechanism ASSY

Fig. – 3

4. "Front Loading ASSY" Removal (See Figure－4)
   1) Remove "Main Belt".
   2) Remove 4 screws (Ⓐ).
   3) Release the hooks on both sides and remove the "Front Loading ASSY". (Since it is difficult to release these hooks, hold the front of the "Front Loading ASSY" and shake it up and down to release them.)

5. "Cassette Load Bracket ASSY" Removal (See Figure－4)
   1) Remove 1 screw (Ⓑ).
   2) Take off the "Cassette Load Bracket ASSY".

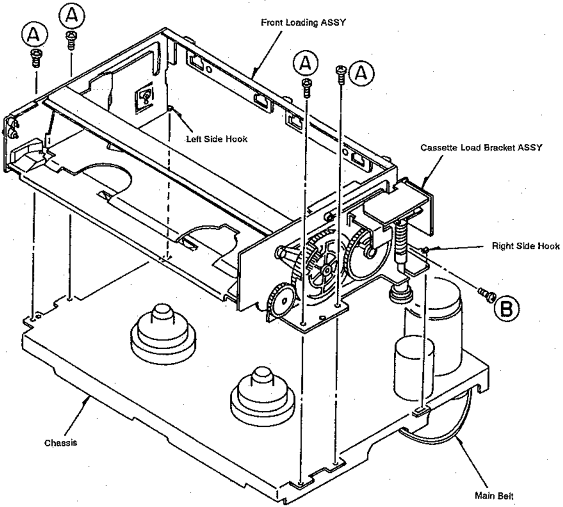

Ⓐ
Ⓐ
Front Loading ASSY
Ⓐ
Ⓐ
Left Side Hook
Cassette Load Bracket ASSY
Right Side Hook
Ⓑ
Chassis
Main Belt

Fig-4

6. "Photo Sensor ASSY" Removal (See Figure – 5)

6 – 1. "Lamp Holder ASSY" Removal

1) Remove 1 screw (Ⓐ) and take off the "T Soft Brake ASSY", "T – Spring, Soft Brake Arm".

2) Release the "Lamp Holder ASSY" from hook (a) of the chassis and turn it counterclockwise to remove it from the chassis.

6 – 2. "Switch C. B", "Sensor Guide" and "Start Sensor C. B" Removal

1) Remove 1 screw (Ⓑ) and take off the "Switch C. B".

2) Remove 1 screw (Ⓒ) and take off the "Sensor Guide".

3) Remove 1 screw (Ⓓ) and take off the "Start Sensor C. B".

6 – 3. "Sensor Guide" and "End Sensor C. B" Removal

1) Remove 1 screw (Ⓔ) and take off the "Sensor Guide".

2) Remove 1 screw (Ⓕ) and take off the "End Sensor C. B".

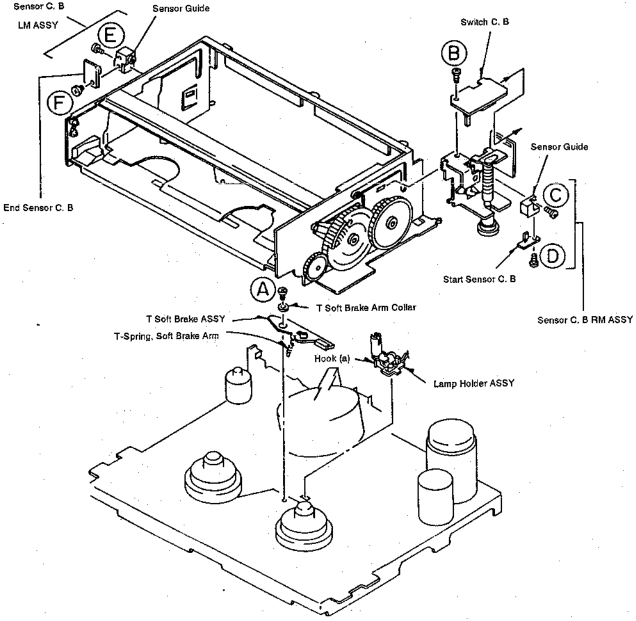

Sensor C. B
LM ASSY
Sensor Guide
Ⓔ
Ⓕ
End Sensor C. B
Switch C. B
Ⓑ
Sensor Guide
Ⓒ
Ⓓ
Start Sensor C. B
Sensor C. B RM ASSY
Ⓐ
T Soft Brake Arm Collar
T Soft Brake ASSY
T-Spring, Soft Brake Arm
Hook (a)
Lamp Holder ASSY

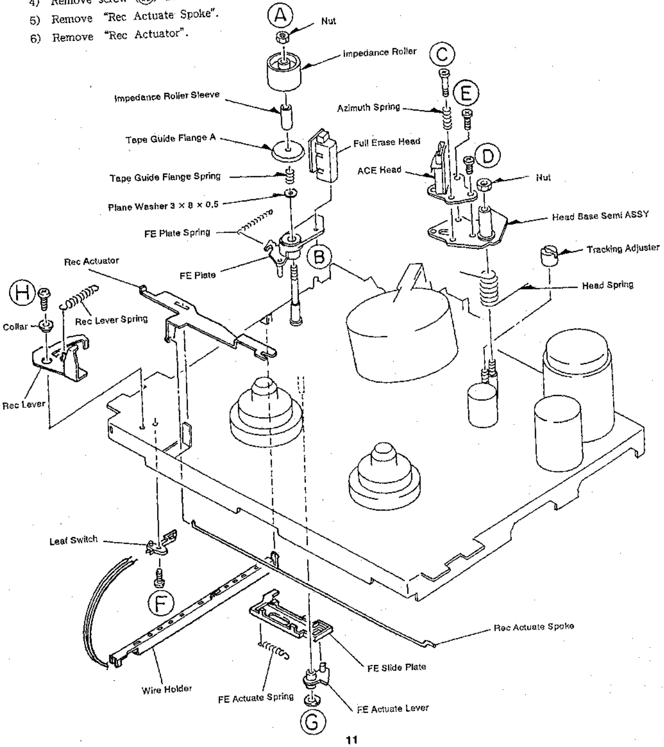
Fig-5

7. "FE Plate" and "ACE Head" Removal (See Figure – 6)

1. "FE Plate" Removal
   1) Remove Nut (Ⓐ).
   2) Take out the "FE Plate Spring" and pull up the "FE Plate".
   3) Remove 1 screw (Ⓑ) and take off the "Full Erase Head".
2. "ACE Head" Removal
   1) Remove 2 screws ((Ⓒ× 1, Ⓓ× 1) and "Azimuth Spring".
   2) Remove 1 screw Ⓔ and "ACE Head".

8. "Rec Actuator" Removal (See Figure – 6)

1) Remove "Wire Holder".
2) Remove screw (Ⓕ) and take off the "Leaf Switch".
3) Remove screw (Ⓖ) and take off the "FE Actuate Lever", "FE Slide Plate" and "FE Actuate Spring".
4) Remove screw (Ⓗ) and take off the "Rec Lever", and "Rec Lever Spring".
5) Remove "Rec Actuate Spoke".
6) Remove "Rec Actuator".


Ⓐ
Nut
Impedance Roller
Ⓒ
Ⓔ
Impedance Roller Sleeve
Azimuth Spring
Tape Guide Flange A
Full Erase Head
Ⓓ
ACE Head
Tape Guide Flange Spring
Nut
Plane Washer 3 × 8 × 0.5
Head Base Semi ASSY
FE Plate Spring
Tracking Adjuster
Rec Actuator
Ⓑ
FE Plate
Head Spring
Ⓗ
Rec Lever Spring
Collar
Rec Lever
Leaf Switch
Ⓕ
Rec Actuate Spoke
FE Slide Plate
Wire Holder
FE Actuate Spring
FE Actuate Lever
Ⓖ

9. "Reel Drive Gear" Removal (See Figure – 7)
   1) Remove the "Front Loading ASSY".
   2) Remove "Drive Belt".
   3) Remove Poly – Washer (Ⓐ) and "Middle Pulley ASSY".
   4) Remove 3 screws (Ⓑ× 1, Ⓒ× 2) and take off the "Sub Plate ASSY".
   5) Remove Nylon – Washer (Ⓓ) and take off the "Clutch ASSY".
   6) Remove 1 screw (Ⓔ) and take off the "T – Spring, Soft Brake Arm".
   7) Take off the "T Soft Brake ASSY".
   8) Remove 2 "E – Rings (Ⓕ)" and take off the 2 "Reel Drive Gear".

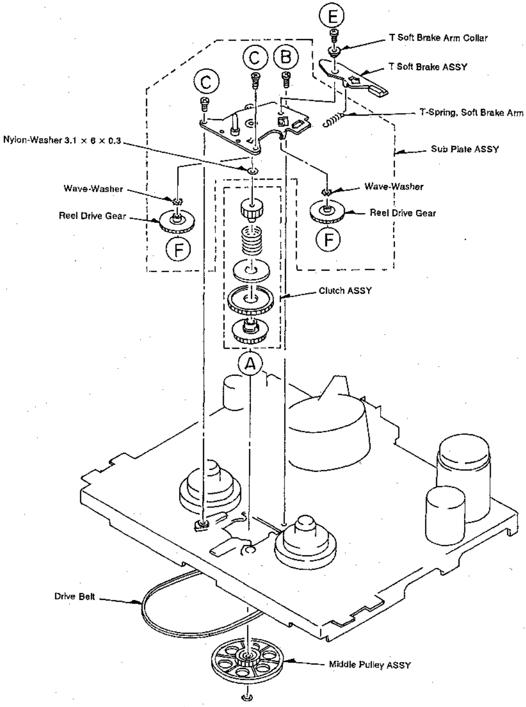

Ⓔ
T Soft Brake Arm Collar
Ⓒ
Ⓑ
T Soft Brake ASSY
Ⓒ
T-Spring, Soft Brake Arm
Nylon-Washer 3.1 × 6 × 0.3
Sub Plate ASSY
Wave-Washer
Wave-Washer
Reel Drive Gear
Reel Drive Gear
Ⓕ
Ⓕ
Clutch ASSY
Ⓐ
Drive Belt
Middle Pulley ASSY

Fig.-7

10. "BT Band ASSY" And "BT Arm Semi ASSY" Removal (See Figure – 8)

1) Remove the "Front Loading ASSY".
2) Remove Poly – Washer (Ⓐ) and "BT Actuate Plate Spring" from the "BT Arm Semi ASSY".
3) Remove 1 screw (Ⓑ) and "Band Holder Spring".
4) Take off the "BT Band ASSY" from the "BT Arm Semi ASSY".

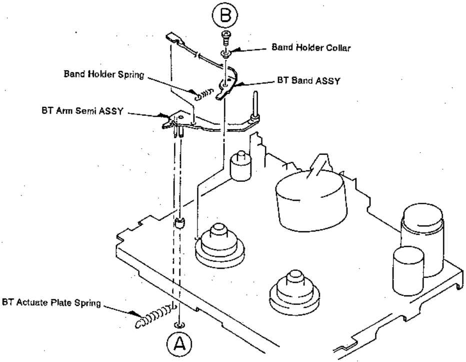

Ⓑ
Band Holder Collar
Band Holder Spring
BT Band ASSY
BT Arm Semi ASSY
BT Actuate Plate Spring
Ⓐ

Fig.-8

11. "Reel ASSY" Removal (See Figure – 9)

1) Remove the "Front Loading ASSY", "Gear Holder ASSY" and "BT Band ASSY".
2) Remove 1 screw (Ⓐ) and the "Back Tension Support".
3) Remove the 2 "Reel ASSY".

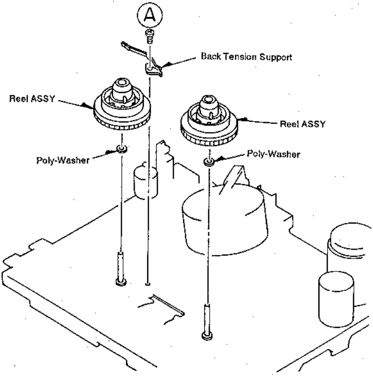

Ⓐ
Back Tension Support
Reel ASSY
Reel ASSY
Poly-Washer
Poly-Washer

Fig.-9

12. "Cylinder ASSY" Removal (See Figure – 10)

1) Remove the "Front Loading ASSY".
2) Pull out the "RELAY C. B – 5" from the "Cylinder Motor TM85".
3) Remove 1 screw (Ⓐ) and take off the "Drum Earth".
4) Remove 3 screws (Ⓑ) and take off the "Cylinder ASSY".

= Remarks =

Take off the "Cylinder ASSY" carefully without any damage.

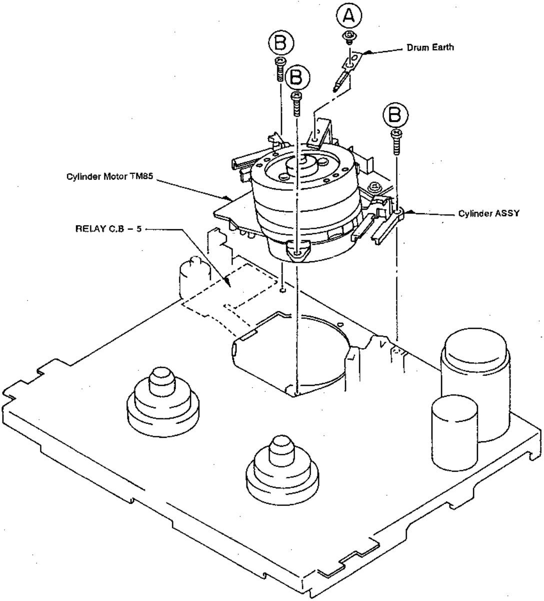

Ⓐ
Ⓑ
Ⓑ
Ⓑ
Drum Earth
Cylinder Motor TM85
Cylinder ASSY
RELAY C.B – 5

Fig.-10

13. "Upper Drum" Removal (See Figure – 11)

1) Remove the "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and take off the "Drum Earth Bracket".
3) Remove 2 screws (Ⓑ) and take off the "Upper Drum" in the direction of the arrow.

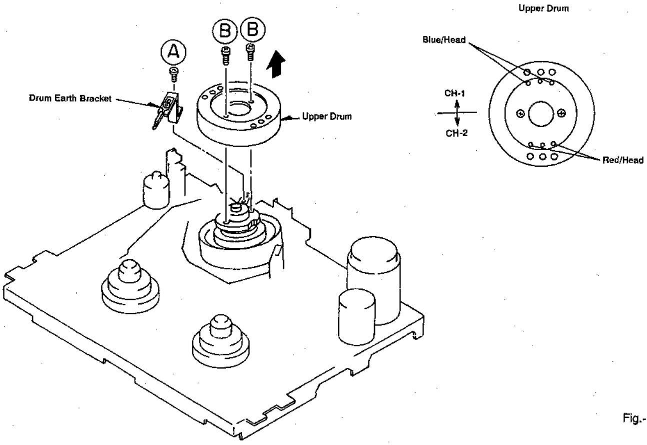

Ⓑ
Ⓑ
Ⓐ
Drum Earth Bracket
Upper Drum
Upper Drum
Blue/Head
CH-1
CH-2
Red/Head

Fig.-11

= Remark =

1. Use gloves and do not touch the drum surface with bare fingers.
2. If the Video head is defective, replace the complete "Upper Drum" with the Head.
3. When installing "Upper Drum" and "Rotor", "Upper Drum" point ⓐ, "Lower Drum" point ⓑ and "Rotor" point ⓒ, these point ⓐ, ⓑ, ⓒ mast line up each other. Otherwise it will creates problem. (See Figure – 11 – 1)

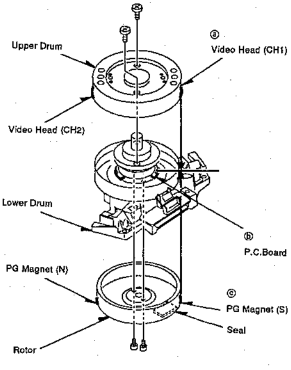
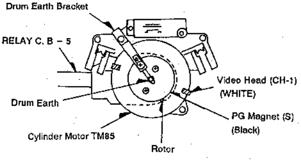

Upper Drum
ⓐ
Video Head (CH1)
Video Head (CH2)
Lower Drum
ⓑ
P.C.Board
PG Magnet (N)
ⓒ
PG Magnet (S)
Seal
Rotor

Fig.-11-1

14. "Cylinder Motor TM82" Removal (See Figure – 12)
   1) Pull out the "RELAY C. B – 5" from the "Cylinder Motor TM85".
   2) Remove 2 screws (Ⓐ) and take off the "Cylinder Motor TM85a".
   3) Remove 3 screws (Ⓑ) and take off the "Cylinder Motor TM85b".


Drum Earth Bracket
RELAY C. B – 5
Video Head (CH-1) (WHITE)
Drum Earth
PG Magnet (S) (Black)
Cylinder Motor TM85
Rotor

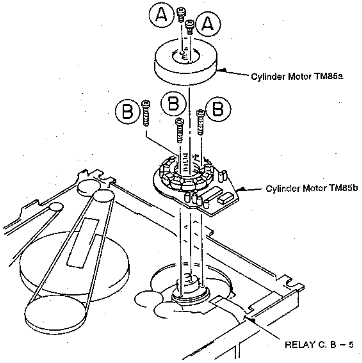

Ⓐ
Ⓐ
Cylinder Motor TM85a
Ⓑ
Ⓑ
Ⓑ
Cylinder Motor TM85b
RELAY C. B – 5

Fig.-12

15. "Capstan Motor ASSY" and "LM ASSY" Removal (See Figure – 13)
   1. "Capstan Motor ASSY" Removal
      1) Take off the "Drive Belt" and "Main Belt".
      2) Remove 2 screws (Ⓐ) and take off the "Capstan Motor ASSY".
   2. "LM ASSY" Removal
      1) Take off the "FI Belt".
      2) Remove 2 screws (Ⓑ) and take off the "LM ASSY".

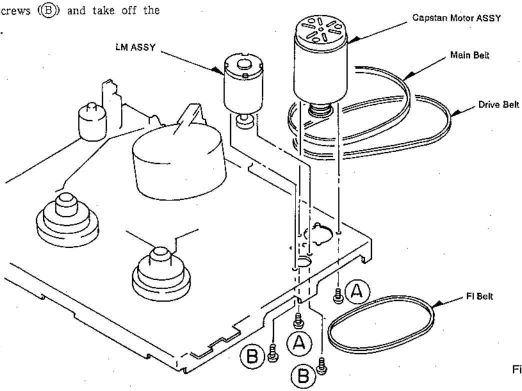

Capstan Motor ASSY
LM ASSY
Main Belt
Drive Belt
Ⓐ
FI Belt
Ⓐ
Ⓑ
Ⓑ

Fig.-13

16. "Loading Gear" and "Loading Cam" Removal (See Figure – 14)

1) Take off the "Loading Belt" from the "Loading Pulley".
2) Remove Poly – Washer (Ⓐ) and take off the "Loading Pulley".
3) Remove Poly – Washer (Ⓑ) and take off the "Loading Gear".
4) Remove Poly – Washer (Ⓒ) and take off the "Eject Arm" and the "Brake Actuate Arm".
5) Remove 2 screws (Ⓓ), and take off the "Loading Lever Reinforce Plate" and the "Loading Lever ASSY".
6) Take off the "Loading Cam".

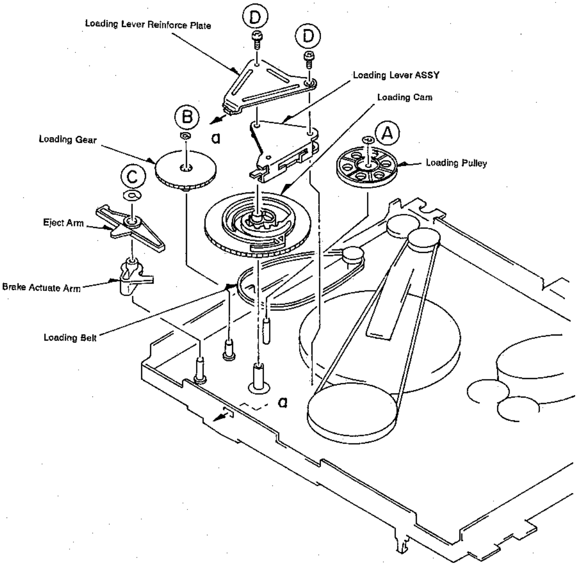
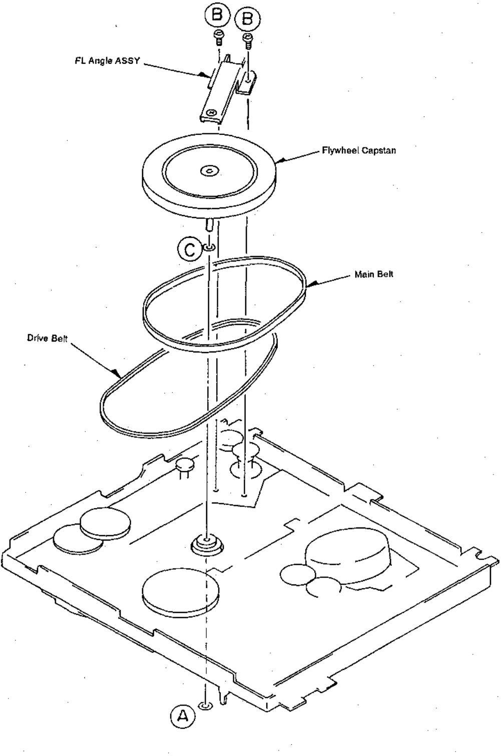

Loading Lever Reinforce Plate
Ⓓ
Ⓓ
Loading Lever ASSY
Loading Cam
Ⓑ
a
Ⓐ
Loading Gear
Loading Pulley
Ⓒ
Eject Arm
Brake Actuate Arm
Loading Belt
a

Fig.-14

17. "Flywheel Capstan" Removal (See Figure – 15)
   1) Remove the Nylon – Washer (Ⓐ).
   2) Take off the "Drive Belt" and "Main Belt".
   3) Remove 2 screws (Ⓑ) and take off the "FL Angle ASSY".
   4) Take off the "Flywheel Capstan".

≡ Remark ≡
Do not miss the Poly – Washer (Ⓒ) when pulling out the "Flywheel Capstan".

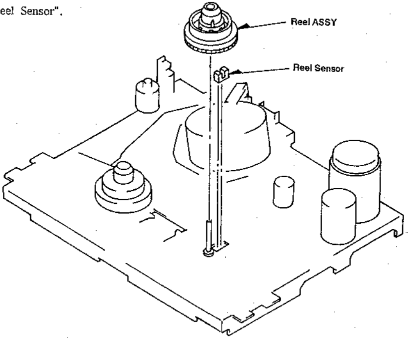


B
B
FL Angle ASSY
Flywheel Capstan
C
Main Belt
Drive Belt
A

Fig.-15

18. "Reel Sensor" Removal (See Figure – 16)

1) Remove "Front Loading ASSY" and the "Gear Holder ASSY".
2) Remove "Reel ASSY".
3) Remove "Reel Sensor".



Reel ASSY
Reel Sensor

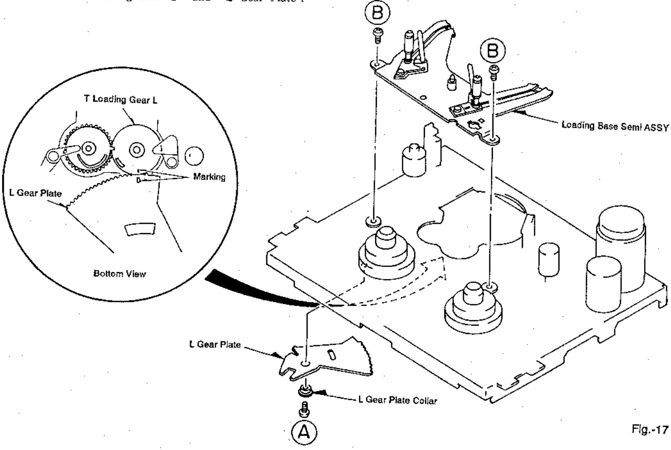
Fig.-16

19. "Loading Base Semi ASSY" Removal (See Figure – 17)

1) Remove "Cylinder ASSY", "BT Arm Semi ASSY", "BT Band ASSY" and "Front Loading ASSY".
2) Remove 1 screw (Ⓐ) and "L Gear Plate Collar", "L Gear Plate".
3) Remove 2 screws (Ⓑ).
4) Take off the "Loading Base Semi ASSY".

= Remark =

When installing the "L Gear Plate", align markings ⓐ on the "T Loading Gear L" and "L Gear Plate".



Ⓑ
Ⓑ
Loading Base Semi ASSY
T Loading Gear L
Marking
L Gear Plate
Bottom View
L Gear Plate
L Gear Plate Collar
Ⓐ

Fig.-17

20. "Wormwheel ASSY" Removal (See Figure – 18)

1. Disassembly
   1) Remove "Front Loading ASSY".
   2) Remove "Cassette Load Bracket ASSY".
   3) Remove E – Ring (Ⓐ).
   4) Remove "Wormwheel ASSY." ("Wormwheel", "Friction Spring", "Friction Gear")
2. Assembly
   1) Turn the "Lift Gear R" fully counterclockwise.
   2) Restore "Wormwheel ASSY" to the stud.

      = Remark =

      Match "Lift Gear R" to the "Wormwheel Hole" as illustrated.

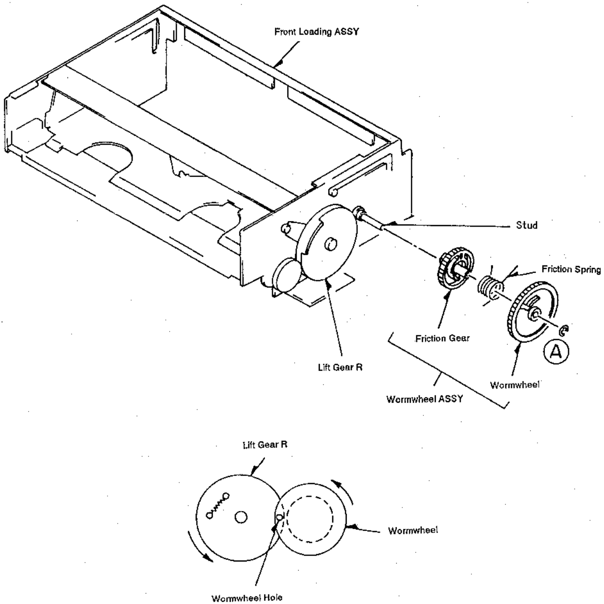

Front Loading ASSY
Stud
Friction Spring
Friction Gear
Ⓐ
Lift Gear R
Wormwheel
Wormwheel ASSY
Lift Gear R
Wormwheel
Wormwheel Hole

Fig-18

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

IC

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
	S0-4EH-IC1-010		HIC, HB-100
	S0-051-C02-010		IC, AN1431T-TA
	S1-2EI-C02-030		IC, BA17805T
	S0-4EI-C02-040		IC, PQ05RF21
	S0-051-C02-030		IC, AN7805F
	S1-ZE1-C02-010		IC, HA17431P
	80-JU4-701-019		IC, MB87813A
	82-JUF-610-019		IC, MB88202H-1093
	87-002-295-010		IC, LH2464-10
	87-002-528-089		IC, TC7W04F
	87-002-304-080		IC, M51271FP
	87-002-305-089		IC, UPC661G
	87-001-604-089		IC, TC74HCU04F
	87-002-298-089		IC, TC74HC00AF
	87-002-299-089		IC, MB40776 FPT
	87-002-300-089		IC, MB40778 FPT
	87-002-273-089		IC, NJM2246M
	87-001-794-089		IC, TC74HC157F
	87-002-302-080		IC, HD74HC221FP
	87-002-329-089		IC, TC74HC02AF
	87-002-868-080		IC, MC74HC08AF
	87-002-567-089		IC, TC4030BF
	87-020-923-089		IC, PST523D
	87-002-485-089		IC, CXL5003M
	87-001-881-089		IC, TC7SU04F(E6)
	87-002-741-089		IC, CXL5001M
	87-002-870-080		IC, MC74HC74AF
	83-JUS-601-019		IC, MB88515B-1639K
	87-002-394-019		IC, LB1641
	80-JUB-652-010		IC, HD49754NT
	87-001-777-019		IC, BA6219B
	87-001-773-019		IC, LA7323
	87-001-937-019		IC, CXL5003P
	87-001-939-019		IC, CXL5001P
	87-001-990-019		IC, TC4049 BP
	87-001-830-019		IC, NJM2234S
	87-001-901-019		IC, LA7333
	87-002-384-019		IC, NJM2246S
	87-002-449-019		IC, NJM2233BS
	87-001-938-019		IC, LA7311
	87-002-339-019		IC, BA7252S
	87-001-970-019		IC, LA7297
	87-001-980-019		IC, LA7913
	87-001-198-019		IC HD14066BP
	87-001-632-019		IC, BA10393N
	87-001-957-019		IC, LA7210
	87-002-369-010		IC, MM1021
	87-002-378-089		IC, L5631
	87-020-969-019		IC, NJM78M09
	80-JU4-703-019		IC, UPD75212ACW-298
	87-001-966-010		IC, BR93C46
	87-001-790-019		IC, UNIT SBX1610-52
	83-JUS-606-010		IC, HD404302RA39S

TRANSISTOR

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
	S0-4EQ-001-010		C-FET, 2SK903
	89-327-125-089		C-TR, 2SC2712GR(LG)
	89-111-625-089		C-TR, 2SA1162GR(SG)
	89-506-210-080		C-FET, 2SK621(30)
	87-026-210-089		C-TR, DTC144EK(26)
	87-026-355-089		C-TR, FMA2(A2)
	87-026-298-089		C-TR, FMW1(W1)
	87-026-211-089		C-TR, DTA144EK(16)
	89-347-296-089		TR, 2SC4729 S
	87-026-218-089		TR, DTC144ES
	89-207-334-089		TR, 2SB733U4
	87-026-452-089		TR, 2SA933S S
	87-026-462-089		TR, 2SC1740S(RS)
	87-026-219-089		TR, DTA144ES
	89-324-122-089		TR, 2SC2412R(BR)
	89-324-123-089		TR, 2SC2412S(BS)
	87-026-463-089		TR, 2SA933S(RS)
	87-026-313-089		TR, DTC343TS TP
	89-322-746-089		TR, 2SC2274F
	87-026-217-089		TR, DTC124ES

DIODE

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
	S0-05D-001-010		DIODE, S1WBA60
	S0-4ED-001-030		DIODE, EG01C
	S0-4ED-001-050		DIODE, ZENER RD3.6ES
	S0-05D-002-010		DIODE, S2LA20
	S0-4ED-002-040		DIODE, ERB83-006
	S0-05D-002-050		DIODE, ZENER HZ24BP-TK
	S1-9A0-D02-070		DIODE, ZENER RD24F-B2
	S1-9A0-D02-070		DIODE, 1SS270
	87-020-465-089		DIODE, 1SS133
	87-020-027-089		C-DIODE, 1SS184(B3)
	87-002-737-080		DIODE, 11EFS2
	87-027-329-089		ZENER, HZ22-3L
	87-027-474-089		ZENER, HZ11A2
	87-027-449-089		ZENER, HZ15-3L
	87-027-416-089		ZENER, HZ3C2
	87-027-584-089		ZENER, HZ9C1L

MAIN C.B

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C401	87-015-677-089		CAP, E 100-6.3 7L
C402	87-018-205-089		CAP, TC-U 0.022-25 F
C403	87-010-403-089		CAP, E 3.3-50 SME
C404	87-018-134-089		CAP, TC-U 0.01-16 Y
C405	87-010-405-089		CAP, E 10-50 SME
C406	87-010-405-089		CAP, E 10-50 SME
C407	87-010-402-089		CAP, E 2.2-50 SME
C408	87-018-134-089		CAP, TC-U 0.01-16 Y
C411	87-018-134-089		CAP, TC-U 0.01-16 Y
C412	87-018-143-089		CAP, TC-U 4.7P-50 CH
C413	87-018-126-089		CAP, TC-U 390P-50 B
C415	87-018-149-089		CAP, TC-U 15P-50 CH
C416	87-010-855-089		CAP, E 0.47-50 BP SME
C417	87-010-855-089		CAP, E 0.47-50 BP SME
C418	87-010-793-089		CAP, E 0.47-50 BP SRA
C419	87-018-115-089		CAP, TC-U 47P-50 SL〈DH, KE〉
C419	87-018-109-089		CAP, TC-U 22P-50 SL〈Z, K〉
C420	87-018-119-089		CAP, TC-U 100P-50 B
C421	87-018-119-089		CAP, TC-U 100P-50 B
C422	87-018-104-089		CAP, TC-U 10P-50 SL
C424	87-018-122-089		CAP, TC-U 180P-50 B
C426	87-018-124-089		CAP, TC-U 270P-50 B
C427	87-018-119-089		CAP, TC-U 100P-50 B
C430	87-018-114-089		CAP, TC-U 39P-50 SL
C431	87-018-208-089		CAP, TC-U 0.047-50 F
C432	87-018-125-089		CAP, TC-U 330P-50 B
C433	87-018-117-089		CAP, TC-U 68P-50 SL
C434	87-018-134-089		CAP, TC-U 0.01-16 Y
C441	87-010-374-089		CAP, E 47-10
C442	87-010-374-089		CAP, E 47-10
C443	87-018-134-089		CAP, TC-U 0.01-16 Y
C444	87-018-134-089		CAP, TC-U 0.01-16 Y
C445	87-018-110-089		CAP, TC-U 24P-50 SL
C446	87-018-118-089		CAP, TC-U 82P-50 B
C447	87-018-110-089		CAP, TC-U 24P-50 SL
C448	87-018-134-089		CAP, TC-U 0.01-16 Y
C449	87-018-209-089		CAP, TC-U 0.1-50 F
C450	87-018-134-089		CAP, TC-U 0.01-16 Y
C451	87-018-209-089		CAP, TC-U 0.1-50 F

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C452	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C453	87-018-205-089		CAP, TC-U 0.022-25 F
C454	87-018-109-089		CAP, TC-U 22P-50 SL
C455	87-018-117-089		CAP, TC-U 68P-50 SL
C456	87-018-109-089		CAP, TC-U 22P-50 SL
C457	87-018-134-089		CAP, TC-U 0.01-16 Y
C458	87-018-209-089		CAP, TC-U 0.1-50 F
C459	87-018-134-089		CAP, TC-U 0.01-16 Y
C460	87-018-209-089		CAP, TC-U 0.1-50 F
C461	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C462	87-018-205-089		CAP, TC-U 0.022-25 F
C463	87-010-382-089		CAP, E 22-25 SME
C465	87-018-205-089		CAP, TC-U 0.022-25 F
C466	87-018-205-089		CAP, TC-U 0.022-25 F
C467	87-018-205-089		CAP, TC-U 0.022-25 F
C468	87-018-205-089		CAP, TC-U 0.022-25 F
C469	87-010-263-089		CAP, E 100-10
C470	87-018-134-089		CAP, TC-U 0.01-16 Y
C473	87-010-384-089		CAP, E 100-25 SME
C474	87-018-107-089		CAP, TC-U 18P-50 SL
C475	87-018-134-089		CAP, TC-U 0.01-16 Y
C476	87-018-115-089		CAP, TC-U 47P-50 SL
C477	87-018-134-089		CAP, TC-U 0.01-16 Y
C478	87-018-121-089		CAP, TC-U 150P-50 B
C480	87-018-121-089		CAP, TC-U 150P-50 B
C481	87-018-125-089		CAP, TC-U 330P-50 B
C482	87-018-107-089		CAP, TC-U 18P-50 SL
C483	87-018-115-089		CAP, TC-U 47P-50 SL
C484	87-018-113-089		CAP, TC-U 33P-50 SL
C485	87-010-405-089		CAP, E 10-50 SME〈DH, KE〉
C485	87-010-265-089		CAP, E 33-16 SME〈Z, K〉
C486	87-010-384-089		CAP, E 100-25 SME
C487	87-018-205-089		CAP, TC-U 0.022-25 F
C488	87-010-263-089		CAP, E 100-10
C489	87-010-371-089		CAP, E 470-6.3
C490	87-010-374-089		CAP, E 47-10
C492	87-018-134-089		CAP, TC-U 0.01-16 Y〈DH, KE〉
C493	87-010-374-089		CAP, E 47-10
C494	87-010-263-089		CAP, E 100-10
C495	87-018-134-089		CAP, TC-U 0.01-16 Y
C496	87-018-115-089		CAP, TC-U 47P-50 SL
C497	87-010-374-089		CAP, E 47-10
C498	87-010-405-089		CAP, E 10-50 SME
C499	87-010-374-089		CAP, E 47-10
C500	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C500	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C501	87-010-374-089		CAP, E 47-10
C502	87-018-205-089		CAP, TC-U 0.022-25 F
C503	87-018-134-089		CAP, TC-U 0.01-16 Y
C504	87-018-208-089		CAP, TC-U 0.047-50 F
C505	87-018-134-089		CAP, TC-U 0.01-16 Y
C506	87-010-401-089		CAP, E 1-50 SME
C507	87-018-115-089		CAP, TC-U 47P-50 SL
C508	87-010-401-089		CAP, E 1-50 SME
C509	87-010-401-089		CAP, E 1-50 SME
C510	87-018-205-089		CAP, TC-U 0.022-25 F
C511	87-018-209-089		CAP, TC-U 0.1-50 F
C512	87-018-134-089		CAP, TC-U 0.01-16 Y
C513	87-018-119-089		CAP, TC-U 100P-50 B
C514	87-018-134-089		CAP, TC-U 0.01-16 Y
C518	87-018-208-089		CAP, TC-U 0.047-50 F
C519	87-010-401-089		CAP, E 1-50 SME
C520	87-018-134-089		CAP, TC-U 0.01-16 Y
C521	87-018-134-089		CAP, TC-U 0.01-16 Y
C522	87-018-134-089		CAP, TC-U 0.01-16 Y
C523	87-018-134-089		CAP, TC-U 0.01-16 Y
C524	87-018-134-089		CAP, TC-U 0.01-16 Y
C525	87-018-134-089		CAP, TC-U 0.01-16 Y
C526	87-018-134-089		CAP, TC-U 0.01-16 Y
C527	87-010-263-089		CAP, E 100-10

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
C532	87-018-134-089		CAP, TC-U 0.01-16 Y
C534	87-018-134-089		CAP, TC-U 0.01-16 Y
C535	87-018-134-089		CAP, TC-U 0.01-16 Y
C537	87-018-205-089		CAP, TC-U 0.022-25 F
C551	87-018-134-089		CAP, TC-U 0.01-16 Y
C552	87-018-134-089		CAP, TC-U 0.01-16 Y
C553	87-018-134-089		CAP, TC-U 0.01-16 Y
C554	87-018-134-089		CAP, TC-U 0.01-16 Y
C555	87-018-134-089		CAP, TC-U 0.01-16 Y
C556	87-018-208-089		CAP, TC-U 0.047-50 F
C557	87-018-134-089		CAP, TC-U 0.01-16 Y
C558	87-018-134-089		CAP, TC-U 0.01-16 Y
C559	87-018-134-089		CAP, TC-U 0.01-16 Y
C560	87-018-134-089		CAP, TC-U 0.01-16 Y
C561	87-018-134-089		CAP, TC-U 0.01-16 Y
C562	87-018-134-089		CAP, TC-U 0.01-16 Y
C563	87-018-208-089		CAP, TC-U 0.047-50 F
C564	87-018-134-089		CAP, TC-U 0.01-16 Y
C565	87-018-134-089		CAP, TC-U 0.01-16 Y
C566	87-018-134-089		CAP, TC-U 0.01-16 Y
C567	87-018-134-089		CAP, TC-U 0.01-16 Y
C568	87-018-209-089		CAP, TC-U 0.1-50 F
C570	87-018-134-089		CAP, TC-U 0.01-16 Y
C575	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C581	87-015-677-089		CAP, E 100-6.3 7L
C582	87-018-134-089		CAP, TC-U 0.01-16 Y〈Z〉
C583	87-015-677-089		CAP, E 100-6.3 7L
C585	87-015-677-089		CAP, E 100-6.3 7L
C587	87-018-111-089		CAP, TC-U 27P-50 SL
C588	87-018-113-089		CAP, TC-U 33P-50 SL
C589	87-018-111-089		CAP, TC-U 27P-50 SL
C591	87-015-681-089		CAP, E 10-16 7L
C592	87-015-681-089		CAP, E 10-16 7L
C593	87-018-134-089		CAP, TC-U 0.01-16 Y
C594	87-018-134-089		CAP, TC-U 0.01-16 Y
C601	87-010-405-089		CAP, E 10-50 SME
C602	87-018-134-089		CAP, TC-U 0.01-16 Y
C603	87-010-403-089		CAP, E 3.3-50 SME
C604	87-010-403-089		CAP, E 3.3-50 SME
C605	87-010-263-089		CAP, E 100-10
C606	87-010-405-089		CAP, E 10-50 SME
C607	87-018-134-089		CAP, TC-U 0.01-16 Y
C608	87-018-134-089		CAP, TC-U 0.01-16 Y
C781	87-010-401-089		CAP, E 1-50 SME
C782	87-010-405-089		CAP, E 10-50 SME
C785	87-010-384-089		CAP, E 100-25 SME
C786	87-018-134-089		CAP, TC-U 0.01-16 Y
C789	87-010-405-089		CAP, E 10-50 SME
C790	87-010-405-089		CAP, E 10-50 SME
C792	87-018-203-089		CAP, TC-U 8200P-16 Y
C802	87-010-260-089		CAP, E 47-25 SME
C804	87-018-134-089		CAP, TC-U 0.01-16 Y〈DH, KE〉
C804	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, K〉
C805	87-018-134-089		CAP, TC-U 0.01-16 Y
C806	87-010-263-089		CAP, E 100-10
C807	87-010-263-089		CAP, E 100-10
C808	87-010-374-089		CAP, E 47-10
C809	87-010-408-089		CAP, E 47-50 SME
C810	87-010-404-089		CAP, E 4.7-50 SME
C811	87-010-404-089		CAP, E 4.7-50 SME
C812	87-010-401-089		CAP, E 1-50 SME〈Z, K, KE〉
C812	87-010-402-089		CAP, E 2.2-50 SME〈DH〉
C813	87-010-404-089		CAP, E 4.7-50 SME
C814	87-010-401-089		CAP, E 1-50 SME
C817	87-010-401-089		CAP, E 1-50 SME
C823	87-018-134-089		CAP, TC-U 0.01-16 Y
C824	87-018-134-089		CAP, TC-U 0.01-16 Y〈DH, KE〉
C824	87-018-205-089		CAP, TC-U 0.022-25 F〈Z, K〉
C825	87-018-134-089		CAP, TC-U 0.01-16 Y
C826	87-018-134-089		CAP, TC-U 0.01-16 Y

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
C828	87-010-374-089		CAP, E 47-10
C829	87-010-405-089		CAP, E 10-50 SME
C832	87-018-131-089		CAP, TC-U 1000P-50 B
C833	87-018-125-089		CAP, TC-U 330P-50 B
C834	87-010-400-089		CAP, E 0. 47-50 SME
C835	87-010-401-089		CAP, E 1-50 SME
C836	87-018-122-089		CAP, TC-U 180P-50 B
C837	87-010-544-089		CAP, E 0. 1-50(Z)
C837	87-010-400-089		CAP, E 0. 47-50 SME(K, DH, KE)
C839	87-018-134-089		CAP, TC-U 0. 01-16 Y
C840	87-018-134-089		CAP, TC-U 0. 01-16 Y
C841	87-018-134-089		CAP, TC-U 0. 01-16 Y
C843	87-018-134-089		CAP, TC-U 0. 01-16 Y
C844	87-018-134-089		CAP, TC-U 0. 01-16 Y
C845	87-018-134-089		CAP, TC-U 0. 01-16 Y
C848	87-018-205-089		CAP, TC-U 0. 022-25 F
C849	87-018-134-089		CAP, TC-U 0. 01-16 Y(Z, K)
C849	87-018-205-089		CAP, TC-U 0. 022-25 F(DH, KE)
C850	87-010-405-089		CAP, E 10-50 SME(Z, K)
C852	87-018-134-089		CAP, TC-U 0. 01-16 Y
C853	87-018-134-089		CAP, TC-U 0. 01-16 Y
C854	87-010-374-089		CAP, E 47-10
C861	87-018-209-089		CAP, TC-U 0. 1-50 F(Z)
C862	87-018-209-089		CAP, TC-U 0. 1-50 F(Z)
C863	87-018-209-089		CAP, TC-U 0. 1-50 F(Z)
CF801	87-030-228-019		VIB, CER CSB500E5
DL501	80-JUB-675-019		DL, ADL-FN1344W
DL502	80-JUB-676-019		DL, ADL-FE2544W
DL503	80-JUB-674-019		DL, ADL-FN1334W
FL401	89-JU8-618-019		FLTR, MXV-7XF 3M
FL501	87-030-240-019		FLTR, 4. 21MHZ BPF(Z, K)
FL501	82-JUF-621-019		FLTR, SBP-4820 4. 21M(DH, KE)
FL502	82-JUF-622-019		FLTR, SBP-4821 5. 06M
FL503	80-JU1-743-019		FLTR, LPF 1. 1M SG
FL504	80-JUB-681-019		FLTR, BPF 3. 58M SG
FL505	80-JUB-682-019		FLTR, BPF 4. 43M SG
J401	89-JU7-646-019		JACK, PIN 2-2(DH, KE)
J402	89-JU7-646-019		JACK, PIN 2-2(DH, KE)
L401	87-005-436-089		COIL, 22UH FLR50
L402	87-003-102-089		COIL, 10UH
L403	87-003-285-089		COIL, 39UH LAL02
L431	87-003-288-089		COIL, 180UH LAL02
L432	87-003-151-089		COIL, 82UH LAL02
L441	87-003-147-089		COIL, 22UH
L442	87-005-436-089		COIL, 22UH FLR50
L443	87-003-150-089		COIL 68UH
L444	87-003-150-089		COIL 68UH
L445	87-003-150-089		COIL 68UH
L446	87-003-150-089		COIL 68UH
L465	87-006-189-089		COIL, 220UH EL0909
L475	87-003-288-089		COIL, 180UH LAL02(Z, K)
L475	87-003-151-089		COIL, 82UH LAL02(DH, KE)
L476	87-003-282-089		COIL, 12UH
L478	87-003-403-089		COIL, 5. 6UH LAL02
L479	87-003-288-089		COIL, 180UH LAL02
L480	87-003-282-089		COIL, 12UH
L486	87-005-444-089		COIL, 100UH FLR50
L487	87-005-436-089		COIL, 22UH FLR50
L488	87-005-444-089		COIL, 100UH FLR50(Z)
L488	87-003-147-089		COIL, 22UH(DH, KE)
L488	87-005-436-089		COIL, 22UH FLR50(K)
L489	87-005-444-089		COIL, 100UH FLR50
L501	87-005-436-089		COIL, 22UH FLR50
L503	87-003-283-089		COIL, 18UH LAL02
L551	87-003-146-089		COIL, 15UH LAL02
L552	87-003-146-089		COIL, 15UH LAL02
L555	87-003-146-089		COIL, 15UH LAL02
L560	87-003-284-089		COIL, 27UH LAL02
L562	87-003-284-089		COIL, 27UH LAL02
L563	87-003-284-089		COIL, 27UH LAL02

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
L564	87-005-754-089		COIL, 22UH LHLC06(Z)
L601	87-003-147-089		COIL, 22UH
L611	87-003-102-089		COIL, 10UH(Z)
L781	87-005-444-089		COIL, 100UH FLR50
L801	87-005-444-089		COIL, 100UH FLR50
L802	87-005-444-089		COIL, 100UH FLR50
L803	87-005-444-089		COIL, 100UH FLR50
L805	87-005-444-089		COIL, 100UH FLR50
L808	87-005-444-089		COIL, 100UH FLR50
PIF801	80-JU4-646-010		PIF PAC F4E0-721P1(K)
PIF801	82-JUT-630-010		PIF, PAC F4E0-722P1(Z)
RF386	80-JU4-647-019		MOD, RF MDLK 6E 814A(Z, K)
RF386	89-JU5-672-010		RF MOD, E7553TG(KE)
RF386	89-JU5-693-019		RF MOD, E773A(DH)
SFR401	87-024-541-089		SFK, 3. 3K DLA6 H
SFR402	87-024-542-089		SFR, 4. 7K DIA6 H
SFR403	87-024-543-089		SFR, 10K DIA6 H
SFR404	87-024-541-089		SFK, 3. 3K DLA6 H
SFR405	87-024-539-089		SFR, 1K DIA6 H
SFR406	87-024-540-089		SFR, 2. 2K DIA6 H
SFR407	87-024-540-089		SFR, 2. 2K DIA6 H
SFR531	87-024-539-089		SFR, 1K DIA6 H
SW801	87-036-185-019		SW, SL2-2-3SSU1(Z, K)
TU801	80-JU2-611-119		TV TU, 33-RC01(KE)
TU801	89-JU5-653-019		TV TU, F4EH-721(DH)
VIF801	80-JU4-644-019		VIF PAC, 02M-03(KE)
VIF801	80-JU4-645-019		VIF PAC, 12M-02(DH)
X501	80-JUB-678-089		VIB, XTAL 3. 58 MH
X502	89-JU7-641-089		VIB, XTAL 4. 43M

SERVO/SYS. CON C. B

REF.NO	PART NO.	カンリ NO.	DESCRIPTION
BZ201	87-030-210-019		VIB, BZ PKM17EPT
C101	87-010-387-089		CAP, ELECT 470-25V
C102	87-018-132-089		CAP, TC-U 2200P-16 X
C104	87-010-221-089		CAP, E 470-10
C105	87-010-408-089		CAP, E 47-50 SME
C106	87-010-879-089		CAP, E 470-35 SMG
C107	87-010-384-089		CAP, E 100-25 SME
C108	87-010-263-089		CAP, E 100-10
C109	87-010-263-089		CAP, E 100-10
C110	87-010-384-089		CAP, E 100-25 SME
C111	87-010-221-089		CAP, E 470-10
C112	87-018-209-089		CAP, TC-U 0. 1-50 F
C201	87-010-263-089		CAP, E 100-10
C202	87-018-209-089		CAP, TC-U 0. 1-50 F
C203	87-018-208-089		CAP, TC-U 0. 047-50 F
C204	87-018-134-089		CAP, TC-U 0. 01-16 Y
C205	87-018-209-089		CAP, TC-U 0. 1-50 F
C221	87-018-209-089		CAP, TC-U 0. 1-50 F
C223	87-010-384-089		CAP, E 100-25 SME
C301	87-010-263-089		CAP, E 100-10
C302	87-010-401-089		CAP, E 1-50 SME
C303	87-010-401-089		CAP, E 1-50 SME
C304	87-018-134-089		CAP, TC-U 0. 01-16 Y
C305	87-010-401-089		CAP, E 1-50 SME
C306	87-010-401-089		CAP, E 1-50 SME
C307	87-018-134-089		CAP, TC-U 0. 01-16 Y
C308	87-010-401-089		CAP, E 1-50 SME
C309	87-010-401-089		CAP, E 1-50 SME
C310	87-018-134-089		CAP, TC-U 0. 01-16 Y
C321	87-010-263-089		CAP, E 100-10
C322	87-018-209-089		CAP, TC-U 0. 1-50 F
C324	87-018-134-089		CAP, TC-U 0. 01-16 Y
C326	87-018-109-089		CAP, TC-U 22P-50 SL
C327	87-018-107-089		CAP, TC-U 18P-50 SL
C328	87-018-134-089		CAP, TC-U 0. 01-16 Y
C330	87-018-209-089		CAP, TC-U 0. 1-50 F
C331	87-010-263-089		CAP, E 100-10
C341	87-010-405-089		CAP, E 10-50 SME

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C342	87-010-405-089		CAP, E 10-50 SME
C343	87-018-209-089		CAP, TC-U 0.1-50 F
C344	87-010-405-089		CAP, E 10-50 SME
C361	87-010-405-089		CAP, E 10-50 SME
C362	87-010-402-089		CAP, E 2.2-50 SME
C363	87-018-134-089		CAP, TC-U 0.01-16 Y
C364	87-010-709-089		CAP, E 0.22-50 BP
C365	87-018-209-089		CAP, TC-U 0.1-50 F
C366	87-010-384-089		CAP, E 100-25 SME
C367	87-018-209-089		CAP, TC-U 0.1-50 F
C368	87-018-209-089		CAP, TC-U 0.1-50 F
C371	87-018-209-089		CAP, TC-U 0.1-50 F
C381	87-018-131-089		CAP, TC-U 1000P-50 B
C382	87-010-382-089		CAP, E 22-25 SME
C383	87-010-265-089		CAP, E 33-16 SME
C384	87-018-123-089		CAP, TC-U 220P-50 B
C385	87-010-404-089		CAP, E 4.7-50 SME
C386	87-018-119-089		CAP, TC-U 100P-50 B
CL201	87-030-214-089		VIB, CER KBR6.0MKS
FB405	87-003-316-089		F-BEAD FBA03HA450〈Z〉
L101	87-005-444-089		COIL, 100UH FLR50
L201	87-005-440-089		COIL, 47UH FLR50
L301	87-005-440-089		COIL, 47UH FLR50
L302	87-003-149-089		COIL, 47UH
L310	87-006-189-089		COIL, 220UH EL0909
L311	87-006-189-089		COIL, 220UH EL0909
!R106	87-029-124-069		RES, FUSE 2.2-1/4W
R281	87-029-142-019		RES, FUSE 3.3-1/2W J
R376	87-029-142-019		RES, FUSE 3.3-1/2W J
RA201	84-487-615-019		ARRAY, R 12X103 LE
RA202	84-487-615-019		ARRAY, R 12X103 LE
RA203	80-JUB-657-019		ARRAY, R 10X103 LE
RA204	80-JUB-656-019		ARRAY, R 5X103 LE
SFR301	87-024-277-089		SFR, 220K DIA6 V TP
SFR302	87-024-276-089		SFR, 100K DIA6 V TP
T101	80-JU4-657-019		PT, CONVERTER
X301	80-JUB-655-089		VIB, XTAL 13.3M
X302	80-JUB-654-089		VIB, XTAL 10.7M

HEAD AMP/AUDIO C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C652	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, K〉
C653	87-010-060-089		CAP, E 100-16 7L
C654	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C654	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C654	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C655	87-018-117-089		CAP, TC-U 68P-50 SL
C656	87-018-113-089		CAP, TC-U 33P-50 SL
C657	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, DH, KE〉
C657	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C658	87-018-208-089		CAP, TC-U 0.047-50 F
C660	87-015-695-089		CAP, E 1-50 7L
C661	87-018-208-089		CAP, TC-U 0.047-50 F
C662	87-018-199-089		CAP, TC-U 3300P-16 X
C671	87-015-676-089		CAP, E 47-6.3 7L
C672	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C672	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C672	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C673	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C673	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C673	87-018-134-089		CAP, TC-U 0.01-16 Y〈K〉
C674	87-015-677-089		CAP, E 100-6.3 7L
C675	87-018-205-089		CAP, TC-U 0.022-25 F〈DH, KE〉
C675	87-018-209-089		CAP, TC-U 0.1-50 F〈Z, K〉
C677	87-018-114-089		CAP, TC-U 39P-50 SL
C678	87-018-117-089		CAP, TC-U 68P-50 SL
C680	87-018-109-089		CAP, TC-U 22P-50 SL
C681	87-018-100-089		CAP, TC-U 4.7P-50 SL
C682	87-015-695-089		CAP, E 1-50 7L
C683	87-018-209-089		CAP, TC-U 0.1-50 F
C684	87-018-114-089		CAP, TC-U 39P-50 SL
C685	87-018-209-089		CAP, TC-U 0.1-50 F
C686	87-018-114-089		CAP, TC-U 39P-50 SL
C687	87-015-695-089		CAP, E 1-50 7L
C689	87-015-680-089		CAP, E 47-10 7L〈Z, K〉
C689	87-015-676-089		CAP, E 47-6.3 7L〈DH, KE〉
C701	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C701	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C702	87-010-384-089		CAP, E 100-25 SME
C703	87-015-682-089		CAP, E 22-16 7L〈Z, K〉
C703	87-015-681-089		CAP, E 10-16 7L〈DH, KE〉
C704	87-010-260-089		CAP, E 47-25 SME
C711	87-010-404-089		CAP, E 4.7-50 SME
C714	87-010-402-089		CAP, E 2.2-50 SME
C721	87-018-127-089		CAP, TC-U 470P-50 B
C722	87-010-382-089		CAP; E 22-25 SME
C731	87-018-134-089		CAP, TC-U 0.01-16 Y〈K, DH, KE〉
C731	87-018-209-089		CAP, TC-U 0.1-50 F〈Z〉
C732	87-018-195-089		CAP, TC-U 1200P-16 X
C733	87-018-197-089		CAP, TC-U 1800P-16 X
C734	87-010-401-089		CAP, E 1-50 SME
C735	87-010-265-089		CAP, E 33-16 SME
C737	87-010-401-089		CAP, E 1-50 SME
C739	87-018-205-089		CAP, TC-U 0.022-25 F
C740	87-018-209-089		CAP, TC-U 0.1-50 F
C741	87-018-123-089		CAP, TC-U 220P-50 B
C743	87-018-131-089		CAP, TC-U 1000P-50 B
C744	87-018-134-089		CAP, TC-U 0.01-16 Y
C745	87-010-260-089		CAP, E 47-25 SME
C746	87-010-401-089		CAP, E 1-50 SME
L652	87-005-444-089		COIL, 100UH FLR50
L653	87-003-403-089		COIL, 5.6UH LAL02
L671	87-003-152-089		COIL, 100UH
L672	87-003-284-089		COIL, 27UH LAL02
L673	87-003-148-089		COIL, 33UH
L701	87-005-239-089		COIL, 100UH
L710	87-005-398-089		COIL, 8.2MH LHL06
T741	82-JUF-616-019		COIL, OSC BIAS-70K

DIGITAL C.B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C1	87-010-779-089		C-CAP, E 100-6.3
C2	87-010-779-089		C-CAP, E 100-6.3
C3	87-010-197-089		C-CAP, S 0.01-25 B
C4	87-010-665-089		C-CAP, E 47-6.3
C5	87-010-452-089		C-CAP, 1-16 F
C6	87-010-661-089		C-CAP, E 10-16
C7	87-010-175-089		C-CAP, S 560P-50 SL
C10	87-010-779-089		C-CAP, E 100-6.3
C11	87-010-197-089		C-CAP, S 0.01-25 B
C12	87-010-197-089		C-CAP, S 0.01-25 B
C13	87-010-197-089		C-CAP, S 0.01-25 B
C14	87-012-349-089		C-CAP, S 1000P-50 CH
C15	87-010-197-089		C-CAP, S 0.01-25 B
C17	87-010-197-089		C-CAP, S 0.01-25 B
C18	87-010-452-089		C-CAP, 1-16 F
C19	87-010-665-089		C-CAP, E 47-6.3
C20	87-010-197-089		C-CAP, S 0.01-25 B
C21	87-010-424-089		C-CAP, TN 4.7-4〈K, DH, KE〉
C21	87-010-452-089		C-CAP, 1-16 F〈Z〉
C22	87-010-197-089		C-CAP, S 0.01-25 B
C23	87-010-197-089		C-CAP, S 0.01-25 B
C24	87-010-178-089		C-CAP, S 1000P-50 B
C25	87-010-178-089		C-CAP, S 1000P-50 B
C26	87-010-197-089		C-CAP, S 0.01-25 B
C27	87-010-318-089		C-CAP, S 47P-50 CH
C28	87-010-154-089		C-CAP, S 10P-50 CH
C29	87-010-154-089		C-CAP, S 10P-50 CH
C30	87-010-197-089		C-CAP, S 0.01-25 B
C32	87-010-194-089		C-CAP, S 0.047-25 F

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C33	87-010-194-089		C-CAP, S 0. 047-25 F
C34	87-010-450-089		C-CAP, 0. 47-16 F
C35	87-010-452-089		C-CAP, 1-16 F
C36	87-010-452-089		C-CAP, 1-16 F
C38	87-010-176-089		C-CAP, S 680P-50 SL
C39	87-010-661-089		C-CAP, E 10-16
C41	87-010-176-089		C-CAP, S 680P-50 SL
C42	87-010-661-089		C-CAP, E 10-16
C45	87-010-452-089		C-CAP, 1-16 F
C46	87-010-452-089		C-CAP, 1-16 F
C47	87-010-452-089		C-CAP, 1-16 F
C49	87-010-452-089		C-CAP, 1-16 F
C50	87-010-197-089		C-CAP, S 0. 01-25 B
C51	87-010-665-089		C-CAP, E 47-6. 3
C53	87-012-155-089		C-CAP, S 180P-50 CH
C54	87-010-315-089		C-CAP, S 27P-50 CH
C55	87-010-779-089		C-CAP, E 100-6. 3
C56	87-010-779-089		C-CAP, E 100-6. 3
C57	87-010-197-089		C-CAP, S 0. 01-25 B
C58	87-010-197-089		C-CAP, S 0. 01-25 B
C60	87-010-197-089		C-CAP, S 0. 01-25 B
C61	87-010-665-089		C-CAP, E 47-6. 3
C62	87-010-197-089		C-CAP, S 0. 01-25 B
C63	87-010-196-089		C-CAP, S 0. 1-25 F
C64	87-010-312-089		C-CAP, S 15P-50 CH
C65	87-010-178-089		C-CAP, S 1000P-50 B
C66	87-010-312-089		C-CAP, S 15P-50 CH〈Z〉
C66	87-010-314-089		C-CAP, S 22P-50 CH〈K, DH, KE〉
C67	87-010-197-089		C-CAP, S 0. 01-25 B
C68	87-010-661-089		C-CAP, E 10-16
C69	87-010-661-089		C-CAP, E 10-16
C70	87-010-665-089		C-CAP, E 47-6. 3
C71	87-010-197-089		C-CAP, S 0. 01-25 B
C72	87-010-665-089		C-CAP, E 47-6. 3
C73	87-010-197-089		C-CAP, S 0. 01-25 B
C74	87-010-661-089		C-CAP, E 10-16
C76	87-010-315-089		C-CAP, S 27P-50 CH〈K, DH, KE〉
C76	87-010-316-089		C-CAP, S 33P-50 CH〈Z〉
C77	87-010-314-089		C-CAP, S 22P-50 CH〈Z〉
C77	87-010-315-089		C-CAP, S 27P-50 CH〈K, DH, KE〉
C79	87-010-315-089		C-CAP, S 27P-50 CH
C80	87-010-313-089		C-CAP, S 18P-50 CH〈Z〉
C80	87-010-314-089		C-CAP, S 22P-50 CH〈K, DH, KE〉
C83	87-012-157-089		C-CAP, S 330P-50 CH
C85	87-010-779-089		C-CAP, E 100-6. 3
C86	87-010-197-089		C-CAP, S 0. 01-25 B
C87	87-010-197-089		C-CAP, S 0. 01-25 B
C88	87-010-197-089		C-CAP, S 0. 01-25 B
C89	87-010-197-089		C-CAP, S 0. 01-25 B
C90	87-010-197-089		C-CAP, S 0. 01-25 B
C92	87-010-197-089		C-CAP, S 0. 01-25 B
C93	87-010-661-089		C-CAP, E 10-16
C94	87-010-197-089		C-CAP, S 0. 01-25 B
C95	87-010-197-089		C-CAP, S 0. 01-25 B
C96	87-010-665-089		C-CAP, E 47-6. 3
C97	87-010-665-089		C-CAP, E 47-6. 3
C98	87-010-661-089		C-CAP, E 10-16
C99	87-010-661-089		C-CAP, E 10-16
C100	87-010-779-089		C-CAP, E 100-6. 3
C101	87-010-197-089		C-CAP, S 0. 01-25 B
C102	87-010-176-089		C-CAP, S 680P-50 SL
C103	87-010-197-089		C-CAP, S 0. 01-25 B
C105	87-010-955-089		C-CAP, 0. 33-16 R
C106	87-010-956-089		C-CAP, S 0. 068-25 B
C107	87-010-452-089		C-CAP, 1-16 F
C108	87-010-197-089		C-CAP, S 0. 01-25 B
C109	87-010-197-089		C-CAP, S 0. 01-25 B
C110	87-010-178-089		C-CAP, S 1000P-50 B
C115	87-010-197-089		C-CAP, S 0. 01-25 B
C116	87-010-175-089		C-CAP, S 560P-50 SL

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C117	87-012-142-089		C-CAP, S 0. 33-16 F
C122	87-010-746-089		C-CAP, TN 10-4
C123	87-010-452-089		C-CAP, 1-16 F
C124	87-010-196-089		C-CAP, S 0. 1-25 F
C125	87-010-197-089		C-CAP, S 0. 01-25 B
C126	87-010-196-089		C-CAP, S 0. 1-25 F
C127	87-010-318-089		C-CAP, S 47P-50 CH
C128	87-010-746-089		C-CAP, TN 10-4
C129	87-010-197-089		C-CAP, S 0. 01-25 B
C132	87-010-746-089		C-CAP, TN 10-4
C133	87-010-452-089		C-CAP, 1-16 F
C134	87-010-196-089		C-CAP, S 0. 1-25 F
C135	87-010-197-089		C-CAP, S 0. 01-25 B
C136	87-010-196-089		C-CAP, S 0. 1-25 F
C137	87-010-318-089		C-CAP, S 47P-50 CH
C138	87-010-746-089		C-CAP, TN 10-4
C139	87-010-197-089		C-CAP, S 0. 01-25 B
C140	87-010-452-089		C-CAP, 1-16 F
C141	87-010-452-089		C-CAP, 1-16 F
C142	87-010-452-089		C-CAP, 1-16 F
C150	87-010-315-089		C-CAP, S 27P-50 CH
C151	87-010-148-089		C-CAP, S 4P-50 CH
C152	87-010-312-089		C-CAP, S 15P-50 CH
C200	87-010-318-089		C-CAP, S 47P-50 CH
C201	87-010-746-089		C-CAP, TN 10-4
C202	87-010-196-089		C-CAP, S 0. 1-25 F
C203	87-010-197-089		C-CAP, S 0. 01-25 B
C204	87-010-196-089		C-CAP, S 0. 1-25 F
C205	87-010-197-089		C-CAP, S 0. 01-25 B
C206	87-010-196-089		C-CAP, S 0. 1-25 F
C207	87-010-746-089		C-CAP, TN 10-4
C208	87-010-746-089		C-CAP, TN 10-4
C209	87-010-452-089		C-CAP, 1-16 F
C211	87-010-197-089		C-CAP, S 0. 01-25 B
C212	87-010-197-089		C-CAP, S 0. 01-25 B
C291	87-010-196-089		C-CAP, S 0. 1-25 F
C293	87-010-319-089		C-CAP, S 56P-50 CH
C295	87-015-819-089		CHIP CAP 0. 01
C296	87-010-314-089		C-CAP, S 22P-50 CH〈Z〉
C296	87-010-319-089		C-CAP, S 56P-50 CH〈K, DH, KE〉
C301	87-010-197-089		C-CAP, S 0. 01-25 B
C302	87-018-209-089		CAP, TC-U 0. 1-50 F〈K, DH, KE〉
D1	87-002-345-089		C-VARI-CAP, 1T363-01-T8B
FL1	80-JU4-683-019		FLTR, MZV-29V 6MLPF
FL2	83-JUS-611-019		FLTR, MZV-35L TWINBPF
FL3	80-JU4-682-019		FLTR, MYV-251 3MLP
FL4	80-JU4-684-019		FLTR MXV-7WW 2. 5MLPF
FL10	80-JU4-218-089		FLTR, EMI STB102KB
FL11	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL11	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL12	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL12	80-JU4-218-089		FILTER, EMI STB102KB〈K, DH, KE〉
FL13	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL13	80-JU4-218-089		FILTER, EMI STB102KB〈K, DH, KE〉
FL14	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL14	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL15	87-008-510-089		FLTR, EMI MTB271KB〈Z〉
FL15	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL16	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL16	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL17	87-003-291-089		FLTR, EMI DSS306 102M〈Z〉
FL17	80-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL18	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL18	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL19	87-003-319-089		FLTR, EMI LC680K-R27〈Z〉
FL19	87-JU4-218-089		FLTR, EMI STB102KB〈K, DH, KE〉
FL20	80-JU4-218-089		FLTR, EMI STB102KB
L1	87-005-573-089		C-COIL, 47UH K FLC32
L2	87-005-573-089		C-COIL, 47UH K FLC32
L3	87-005-265-089		C-COIL, 33UH ML3216

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
L4	87-003-297-089		C-COIL, 180UH MLF3225
L5	87-003-297-089		C-COIL, 180UH MLF3225
L6	87-005-573-089		C-COIL, 47UH K FLC32
L7	87-005-573-089		C-COIL, 47UH K FLC32
L8	87-005-266-089		C-COIL, 47UH ML3216
L9	87-005-750-089		C-COIL, 3. 3UH LEM3225
L10	87-005-573-089		C-COIL, 47UH K FLC32
L11	87-005-573-089		C-COIL, 47UH K FLC32
L12	87-005-266-089		C-COIL, 47UH ML3216
L13	87-005-573-089		C-COIL, 47UH K FLC32
L15	87-005-573-089		C-COIL, 47UH K FLC32
L16	87-005-263-089		C-COIL, 15UH ML3216
L17	87-005-263-089		C-COIL, 15UH ML3216
L18	87-005-263-089		C-COIL, 15UH ML3216
L20	87-005-573-089		C-COIL, 47UH K FLC32
SFR1	87-024-334-089		C-SFR, 3. 3K RH03AAA
SFR2	87-024-131-089		C-SFR, 47K
SFR3	87-024-131-089		C-SFR, 47K
SFR4	87-024-131-089		C-SFR, 47K
SFR5	87-024-062-089		C-SFR, 1K
SFR6	87-024-062-089		C-SFR, 1K
SFR9	87-024-418-089		C-SFR, 680K RH03A3A
SFR10	87-024-418-089		C-SFR, 680K RH03A3A
TC1	87-011-221-089		TRIMER. 30P VCT51
TC2	87-011-219-089		CAP TRIMMER 10P VCT
TC5	87-011-221-089		TRIMER. 30P VCT51
X1	80-JU1-676-089		VIB, XTAL 14. 31MHZ
X2	80-JU1-661-089		VIB, XTAL 17. 73MHZ
X3	80-JU1-676-089		VIB, XTAL 14. 31MHZ
X4	80-JU1-661-089		VIB, XTAL 17. 73MHZ
X5	80-JU8-655-089		VIB XTAL 13. 3M

AUTO TRACKING C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C951	87-018-134-089		CAP, TC-U 0. 01-16 Y
C952	87-018-121-089		CAP, TC-U 150P-50 B
C953	87-018-134-089		CAP, TC-U 0. 01-16 Y
C956	87-018-134-089		CAP, TC-U 0. 01-16 Y
C957	87-018-134-089		CAP, TC-U 0. 01-16 Y
C958	87-018-134-089		CAP, TC-U 0. 01-16 Y
C959	87-018-134-089		CAP, TC-U 0. 01-16 Y
C960	87-010-263-089		CAP, E 100-10
C961	87-018-134-089		CAP, TC-U 0. 01-16 Y
C962	87-018-209-089		CAP, TC-U 0. 1-50 F
C963	87-010-263-089		CAP, E 100-10
C965	87-018-134-089		CAP, TC-U 0. 01-16 Y
C966	87-010-263-089		CAP, E 100-10
CL951	87-030-258-089		VIB, CER KBR-4. 0 MKSTF
L951	87-003-149-089		COIL, 47UH
L952	87-005-514-089		COIL, 8. 2UH J LAL02
L953	87-003-149-089		COIL, 47UH

FRONT C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C901	87-010-920-089		CAP, E 22-16 SRE
C902	87-010-920-089		CAP, E 22-16 SRE
C903	87-018-208-089		CAP, TC-U 0. 047-50 F
C908	87-010-922-089		CAP, E 33-25 SRE
C909	87-018-148-089		CAP, TC-U 12P-50 CH
C912	87-018-208-089		CAP, TC-U 0. 047-50 F
C951	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
C952	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
C953	87-018-121-089		CAP, TC-U 150P-50 B〈Z〉
D924	87-001-124-089		LED SLZ 381C-02-T1
D925	87-001-124-089		LED SLZ 381C-02-T1
D926	87-001-124-089		LED SLZ 381C-02-T1
D927	87-001-124-089		LED SLZ 381C-02-T1
D928	87-002-863-080		LED, LT3S43B
D929	87-001-294-089		LED SLZ 481C-02-T1
D930	87-001-294-089		LED SLZ 481C-02-T1
FL901	80-JU4-628-019		FL, 9-LT-22GK
J901	87-009-206-019		JACK, PIN JPJ3844-01
L901	87-005-239-089		COIL, 100UH
RV901	87-024-329-019		VR, 10KB RK09K113-4
SW903	87-036-214-089		SW, TACT EVQ21409K
SW904	87-036-214-089		SW, TACT EVQ21409K
SW905	87-036-214-089		SW, TACT EVQ21409K
SW906	87-036-214-089		SW, TACT EVQ21409K
SW907	87-036-214-089		SW, TACT EVQ21409K
SW908	87-036-214-089		SW, TACT EVQ21409K
SW910	87-036-214-089		SW, TACT EVQ21409K
SW911	87-036-214-089		SW, TACT EVQ21409K
SW912	87-036-214-089		SW, TACT EVQ21409K
SW913	87-036-214-089		SW, TACT EVQ21409K
SW914	87-036-214-089		SW, TACT EVQ21409K
SW915	87-036-214-089		SW, TACT EVQ21409K
SW916	87-036-214-089		SW, TACT EVQ21409K
SW917	87-036-214-089		SW, TACT EVQ21409K
SW918	87-036-214-089		SW, TACT EVQ21409K
SW919	87-036-214-089		SW, TACT EVQ21409K
SW920	87-036-214-089		SW, TACT EVQ21409K
SW921	87-036-214-089		SW, TACT EVQ21409K
SW931	87-036-207-019		SW, SL 2-2-2 VOL12B
SW932	87-036-212-019		SW, SL 2-2-3 FOL9B
X901	87-030-194-010		VIB, XTAL 32. 768K5PPM
X902	87-030-203-089		VIB, CER KBR4. 19MKS

KEY SWITCH C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
D922	87-001-123-089		LED SLZ 981C-02TI
SW901	87-036-214-089		SW, TACT EVQ21409K
SW902	87-036-214-089		SW, TACT EVQ21409K
SW922	87-036-214-089		SW, TACT EVQ21409K
SW923	87-036-214-089		SW, TACT EVQ21409K
SW924	87-036-214-089		SW, TACT EVQ21409K
SW925	87-036-214-089		SW, TACT EVQ21409K
SW926	87-036-214-089		SW, TACT EVQ21409K
SW927	87-036-214-089		SW, TACT EVQ21409K
SW929	87-036-214-089		SW, TACT EVQ21409K
SW930	87-036-214-089		SW, TACT EVQ21409K

POWER-1 C. B

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠C101	S0-05C-001-010		CAP, FILM 0. 22-250
C103	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
⚠F101	S0-05F-001-010		FUSE, T1. 6A 250V〈K, DH, KE〉
⚠F101	87-035-373-010		FUSE, 2A 250V〈Z〉
⚠J101	S0-051-NLE-T00		AC JACK〈K, DH, KE〉
⚠J101	S0-05C-N01-010		AC INLET, CCT9302-01〈Z〉
⚠L101	S0-05L-001-010		COIL, CHOKE 33MH 0. 3A

POWER-2 C. B

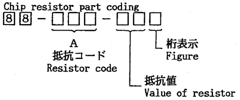
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
⚠C102	S9-EVC-000-210		CAP, TC-U 3300P-250〈Z〉
C102-1	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
C102-2	S9-EVC-000-210		CAP, CERA 3300P-250〈K, DH, KE〉
C104	S0-22Z-020-000		CAP, ELECT 150-400〈K, DH, KE〉
C104	S1-22Z-020-000		CAP, E 150-400〈Z〉
C105	S0-05C-001-010		CAP, FILM 0. 047-630〈K, DH, KE〉
C105	S0-05C-001-050		CAP, FILM 0. 047-630〈Z〉
C106	S0-05C-001-010		CAP, 100P-1000〈K, DH, KE〉
C106	S0-05C-001-060		CAP, TC-U 100P-1K〈Z〉
C107	S0-05C-001-070		CAP, E 1-400〈Z〉
C110	S0-4EC-001-100		CAP, FILM 1000P-50〈Z〉
C201	S0-05C-002-010		CAP, 0. 047-50〈K, DH, KE〉
C202	87-010-029-010		CAP, 0. 047-50〈K, DH, KE〉
C203	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C203	S0-05C-002-030		CAP, E 680-25〈Z〉

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
C204	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C204	87-010-385-010		CAP, E 220-25〈Z〉
C205	S0-9EC-000-070		CAP, ELECT 680-25〈K, DH, KE〉
C205	87-010-429-010		CAP, E 680-16〈Z〉
C206	S1-9A0-C02-060		CAP, E 1200-10
C207	87-010-622-010		CAP, E 470-16
C208	87-010-263-010		CAP, E 100-10
C209	87-010-622-010		CAP, ELECT 470-16〈K, DH, KE〉
C209	S0-4UC-002-090		CAP, E 560-10〈Z〉
C210	87-015-869-010		CAP, ELECT 100-16〈K, DH, KE〉
C210	S0-4UC-002-090		CAP, E 560-10〈Z〉
C211	87-015-869-010		CAP, ELECT 100-16〈K, DH, KE〉
C211	87-010-263-010		CAP, E 100-10〈Z〉
L103	S0-05L-002-010		COIL, CHOKE 39UH 1A〈Z〉
L201	S0-05L-002-010		COIL, CHOKE 39UH 1A
L202	S0-05L-002-010		COIL, CHOKE 39UH 1A
⚠PC101	S0-05P-C01-010		PHOTO COUPLER, ON3171R〈K, DH, KE〉
⚠PC101	S1-6AJ-PC1-010		PHOTO COUPLER, PC817〈Z〉
R101	83-131-616-010		RES, NF 2.2 3W〈K, DH, KE〉
R101	S0-4UR-001-010		RES, 2.2M 1/2W〈Z〉
R102	S0-05R-001-020		RES, 47K 3W
R108	S7-025-507-080		RES, NF 0.22 1W〈K, DH, KE〉
R108	S0-4ER-001-080		RES, 0.22〈Z〉
R201	S0-05R-002-010		RES, 240 1/2W〈Z〉
R202	S0-05R-002-020		RES, 100-470〈Z〉
R203	87-025-306-010		RES, 5.6K 1/4W〈Z〉
R205	87-025-307-010		RES, 1.5K 1/4W〈Z〉
R214	87-025-245-010		RES, 820 1W
RV201	S0-9ET-000-010		SFR, 1K〈K, DH, KE〉
RV201	S0-4ER-V02-010		SFR, 1K〈Z〉
⚠T101	S0-4ET-001-010		TRANSFORMER, T-9003-3〈K, DH, KE〉
⚠T101	S0-4UR-001-010		TRANSFORMER, T-9009-4〈Z〉
RELAY-1 C.B			
C369	87-018-209-089		CAP, TC-U 0.1-50 F
C390	87-018-209-089		CAP, TC-U 0.1-50 F
RELAY-2 C.B			
RELAY-3 C.B			
PCB-L	S8-059-013-470		RELAY-3 PCB ASSY
RELAY-4 C.B			
PCB-M	S8-059-013-050		RELAY-4 PCB ASSY
RELAY-5 C.B			
BASE C.B			
CP1	S6-808-080-030		PHOTO(REEL)SENSOR ON1385
PCB-O	S8-059-133-020		BASE PCB ASSY
SWITCH C.B			
PCB-P	S8-059-163-330		SWITCH PCB ASSY(W/SW1, 2, 3)

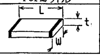
REF. NO	PART NO.	カンリ NO.	DESCRIPTION
START SENSOR C.B			
PCB-Q	S8-059-163-160		SENSOR PCB RM ASSY
END SENSOR C.B			
PCB-R	S8-059-163-010		SENSOR PCB LM ASSY
LED C.B			
LED1	S8-059-133-030		LED ASSY(W/PCB-S)
ACE HEAD C.B			
ACEH	S6-204-150-060		ACE HEAD HV22521(W/PCB-T)
ERASE HEAD C.B			
FEH	S6-204-150-030		FULL ERASE HEAD(W/PCB-U)
SPEED DET C.B			
C1	87-010-452-089		C-CAP, 1-16 F
C2	87-010-452-089		C-CAP, 1-16 F
C3	87-010-452-089		C-CAP, 1-16 F
C4	87-010-197-089		C-CAP, S 0.01-25 B
C13	87-010-197-089		C-CAP, S 0.01-25 B
L1	87-003-102-089		COIL, 10UH
X1	87-030-214-089		VIB, CER KBR6.0MKS
CONNECTOR C.B			
C430	87-018-127-089		CAP, TC-U 470P-50 B〈Z〉
C431	87-018-127-089		CAP, TC-U 470P-50 B〈Z〉
C436	87-018-134-089		CAP, TC-U 0.01-16 Y〈Z〉
C437	87-018-118-089		CAP, TC-U 82P-50 B〈Z〉
CN411	87-009-205-019		CONN, 21P HXC1521〈Z, K〉
L405	87-003-286-089		COIL 56UH〈Z〉
L406	87-003-102-089		COIL, 10UH〈Z〉
PAL SWITCH C.B			
SW801	87-036-328-019		SW, SL 1-1-2 SSSF01〈DH〉
POWER SUB C.B			
C103	S0-05C-010-210		CAP, TC-U 2200P-250〈Z〉
MISCELLANEOUS			
	S8-059-010-180		UPPER DRUM(W/VIDEO HEAD)
	S8-059-013-040		LOWER DRUM ASSY
M1	S6-004-090-010		CYLINDER MOTOR TM85
M2	S8-059-073-020		CAPSTAN MOTOR ASSY
M3	S8-059-113-010		LOADING MOTOR ASSY
SW4	S6-401-011-510		LEAF SW

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

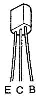
チップ抵抗部品コードの成り立ち
Chip resistor part coding



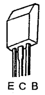
チップ抵抗
Chip resistor

Wattage 容量	Type 種類	Tolerance 許容誤差	Symbol 記号	Dimensions／寸法(mm)				Resistor Code : A 抵抗コード : A
				Form/外形	L	W	t	
1/32W	1608	±5%	CJ		1.6	0.8	0.35	108
1/10W	2125	±5%	CJ		2	1.25	1.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.5 ~0.7	128

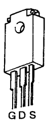
TRANSISTOR ILLUSTRATION



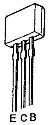
2SA933
2SC1740
2SC4729



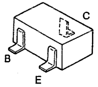
2SB733



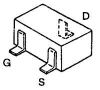
2SK903



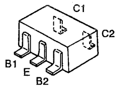
DTA144ES
DTC144ES



2SA1162
2SC2412
2SC2712
DTA144EK
DTC144EK

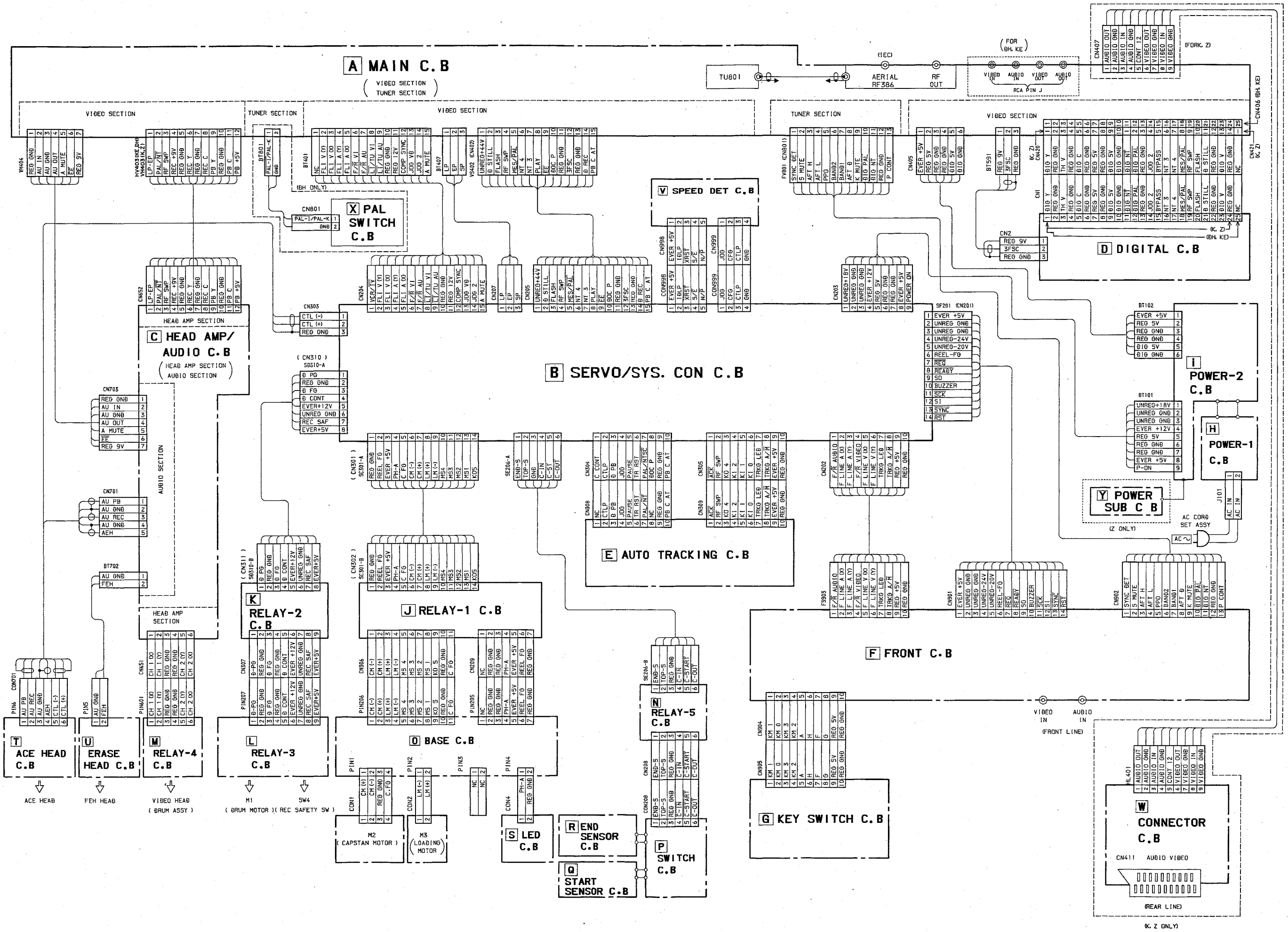


2SK621
DTC124ES
DTC343TS

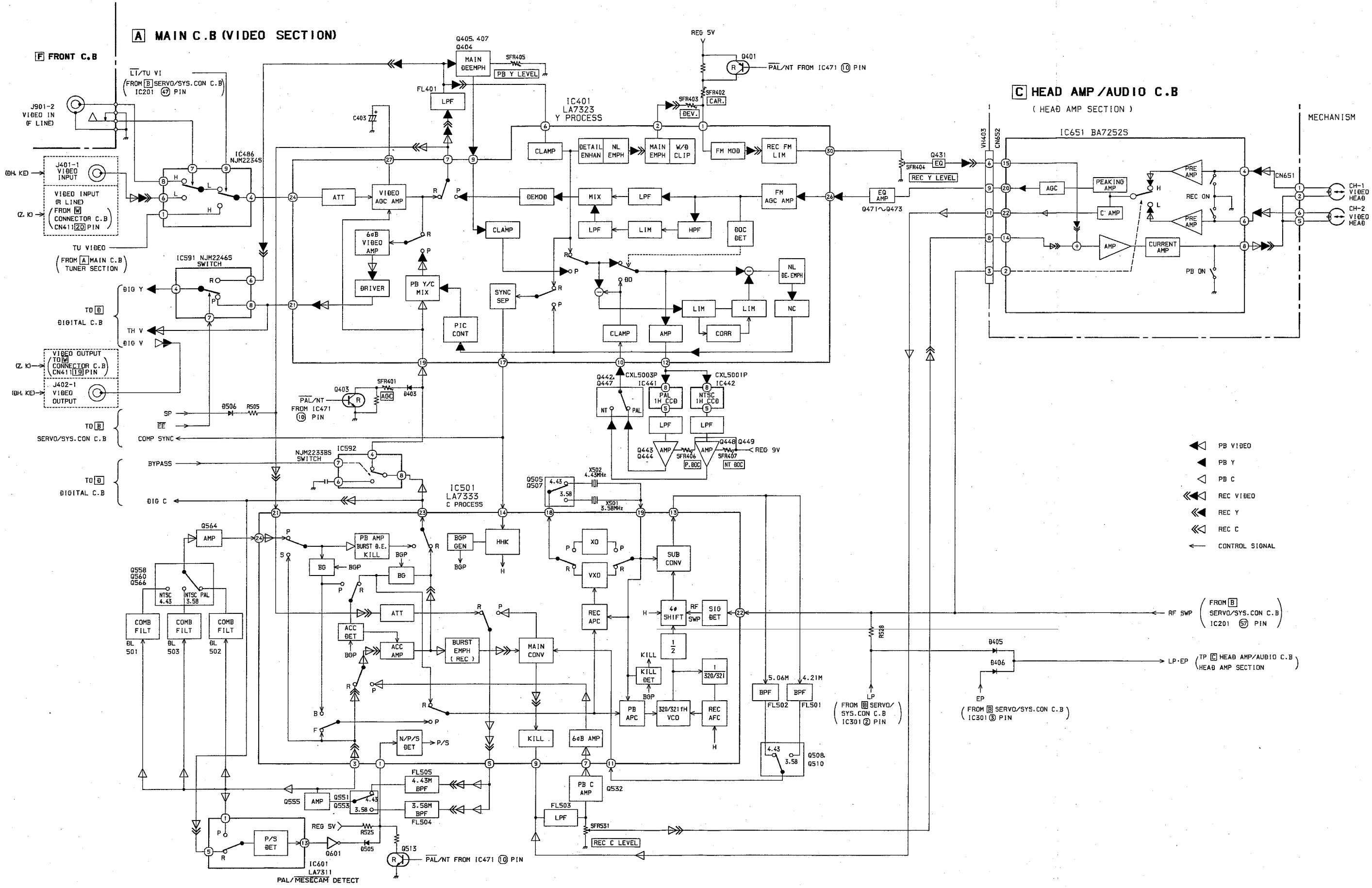


FMA2
FMW1

WIRE HARNESS DIAGRAM

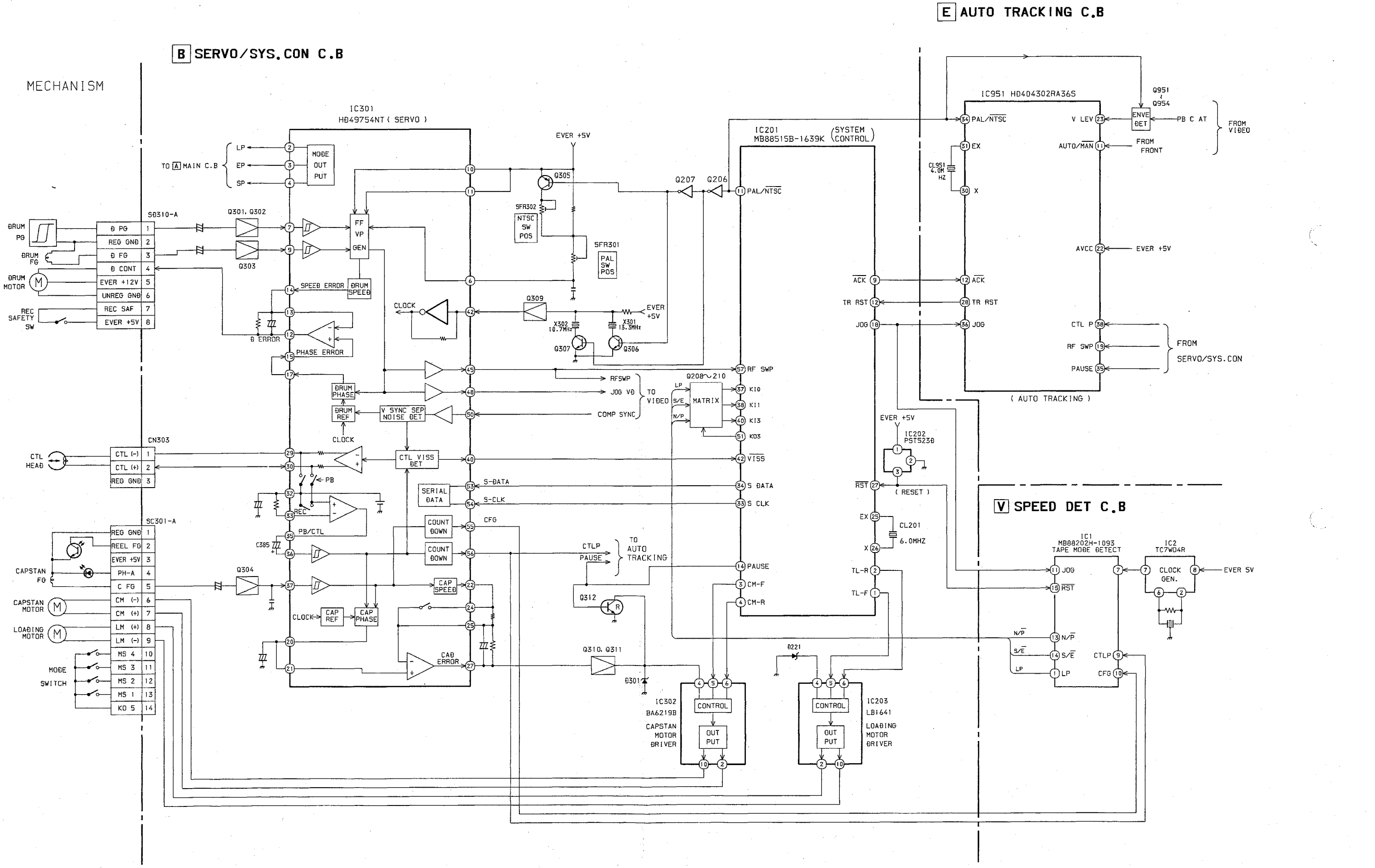

A MAIN C.B
(VIDEO SECTION TUNER SECTION)
VIDEO SECTION
TUNER SECTION
TU801
(IEC)
AERIAL RF386
RF OUT
(FOR BH, KE)
VIDEO IN
AUDIO IN
VIDEO OUT
AUDIO OUT
RCA PIN J
CN407
(FOR K, Z)
CN406 (BH, KE)
CN421 (K, Z)
VH404
HV403(KE,BH) VH403(K,Z)
BT801
BT401
BT407
VS402 (CN402)
FV801 (CN801)
CN405
BT591
CN1
CN2
X PAL SWITCH C.B
CN801
PAL-I/PAL-K
V SPEED DET C.B
CN998
CN999
D DIGITAL C.B
C HEAD AMP/ AUDIO C.B
(HEAD AMP SECTION AUDIO SECTION)
HEAD AMP SECTION
AUDIO SECTION
CN652
CN703
CN701
BT702
CN303
CN310 / SB310-A
B SERVO/SYS. CON C.B
CN204
CN207
CN205
CN203
SF201 (CN201)
CN301 / SC301-A
SE206-A
CN304
CN305
CN202
CN308
CN309
E AUTO TRACKING C.B
I POWER-2 C.B
BT102
BT101
H POWER-1 C.B
J101
AC IN
Y POWER SUB C.B
AC CORD SET ASSY
(Z ONLY)
K RELAY-2 C.B
CN311 / SB310-B
J RELAY-1 C.B
CN302 / SC301-B
F FRONT C.B
FS903
CN901
CN902
VIDEO IN
AUDIO IN
(FRONT LINE)
HEAD AMP SECTION
CN651
CN307
CN306
CN209
N RELAY-5 C.B
SE206-B
CN208
CN208
CN904
CN905
G KEY SWITCH C.B
CN701
PIN6
PIN5
PIN401
PIN207
PIN206
PIN205
T ACE HEAD C.B
U ERASE HEAD C.B
M RELAY-4 C.B
L RELAY-3 C.B
O BASE C.B
PIN1
PIN2
PIN3
PIN4
CON1
CON2
CON4
ACE HEAD
FEH HEAD
VIDEO HEAD (DRUM ASSY)
M1 (DRUM MOTOR)
SW4 (REC SAFETY SW)
M2 (CAPSTAN MOTOR)
M3 (LOADING MOTOR)
S LED C.B
R END SENSOR C.B
Q START SENSOR C.B
P SWITCH C.B
W CONNECTOR C.B
HL401
CN411 AUDIO VIDEO
(REAR LINE)
(K, Z ONLY)

BLOCK DIAGRAM – 1 (VIDEO SECTION)

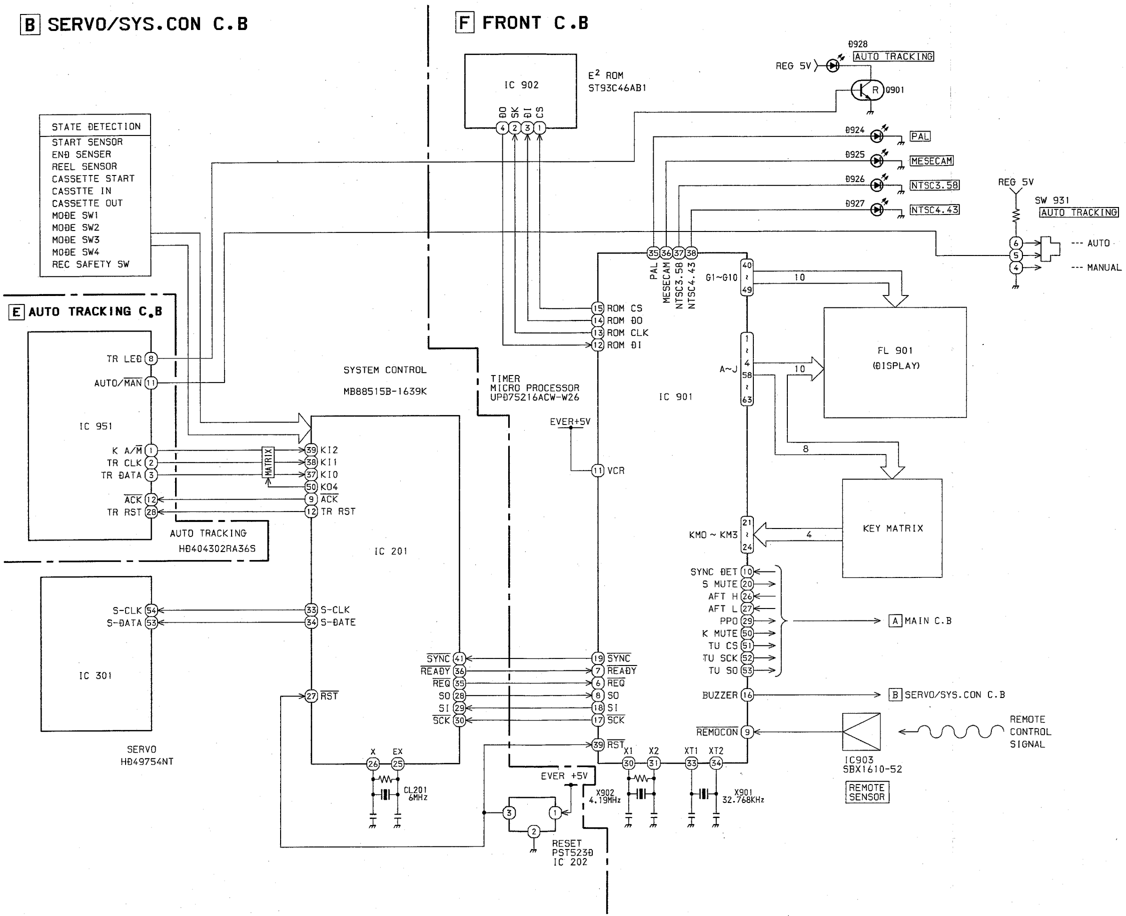


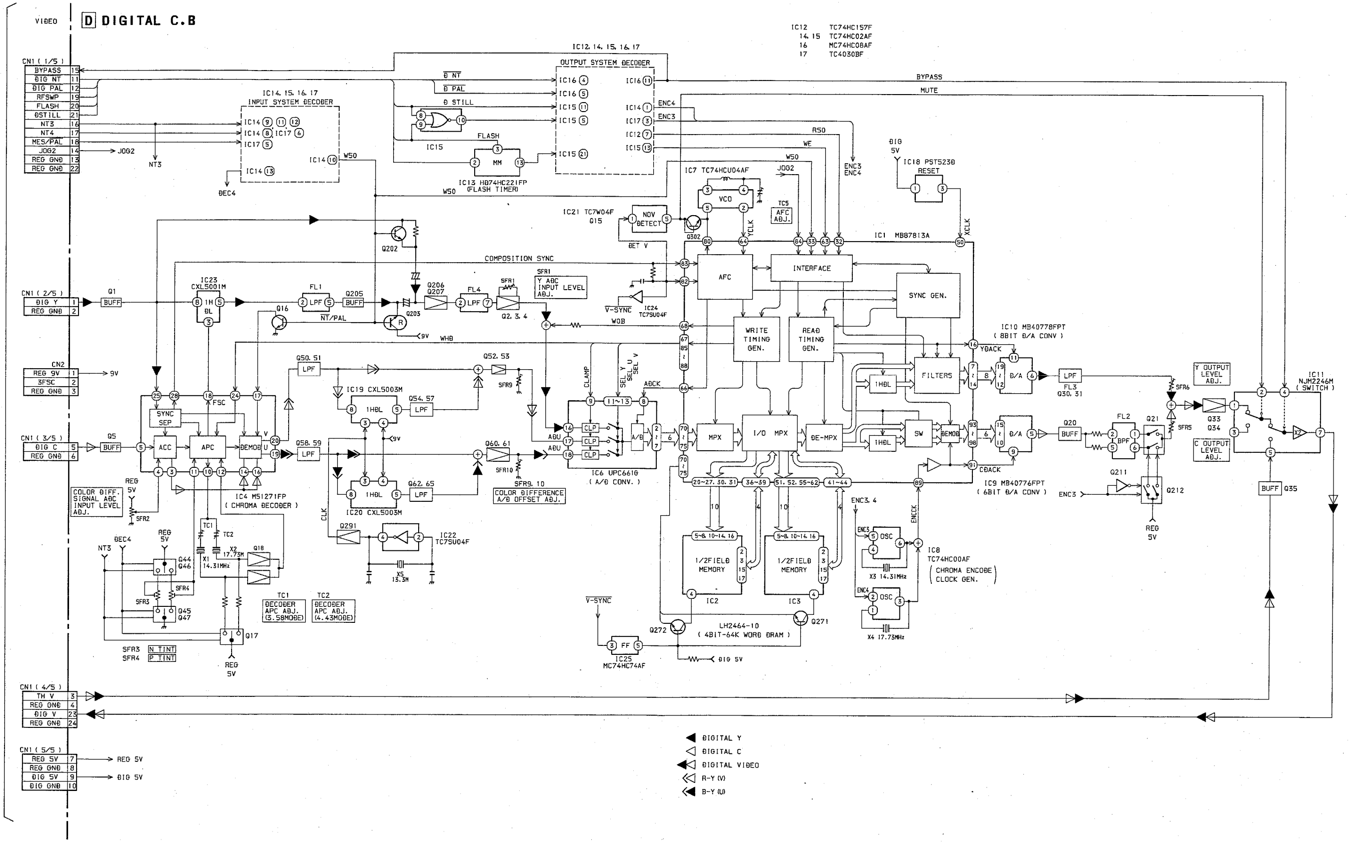
A MAIN C.B (VIDEO SECTION)
F FRONT C.B
C HEAD AMP/AUDIO C.B
(HEAD AMP SECTION)
MECHANISM
J901-2 VIDEO IN (F LINE)
LT/TU VI (FROM B SERVO/SYS.CON C.B IC201 47 PIN)
J401-1 VIDEO INPUT
VIDEO INPUT (R LINE) (FROM W CONNECTOR C.B CN411 20 PIN)
IC486 NJM2234S
TU VIDEO (FROM A MAIN C.B TUNER SECTION)
IC591 NJM2246S SWITCH
DIG Y
TO D DIGITAL C.B
TH V
DIG V
VIDEO OUTPUT (TO W CONNECTOR C.B CN411 19 PIN)
J402-1 VIDEO OUTPUT
SP
EE
TO B SERVO/SYS.CON C.B
COMP SYNC
D506
R505
Q405, 407
Q404
MAIN DEEMPH
SFR405
PB Y LEVEL
FL401
LPF
C403
IC401 LA7323 Y PROCESS
ATT
VIDEO AGC AMP
6dB VIDEO AMP
DRIVER
PB Y/C MIX
PIC CONT
SYNC SEP
CLAMP
DEMOD
MIX
LPF
LIM
HPF
DETAIL ENHAN
NL EMPH
MAIN EMPH
W/D CLIP
FM MOD
REC FM LIM
FM AGC AMP
DOC DET
NL DE-EMPH
NC
CORR
AMP
REG 5V
Q401
PAL/NT FROM IC471 10 PIN
SFR403
DEV.
SFR402
CAR.
Q403
SFR401
AGC
D403
PAL/NT FROM IC471 10 PIN
Q442, Q447
CXL5003P IC441
PAL 1H CCD
CXL5001P IC442
NTSC 1H CCD
NT
PAL
Q443 Q444
SFR406
P.DOC
Q448 Q449
SFR407
NT DOC
REG 9V
NJM2233BS SWITCH
IC592
BYPASS
DIG C
IC501 LA7333 C PROCESS
Q505 Q507
4.43
3.58
X502 4.43MHz
X501 3.58MHz
Q564
AMP
PB AMP BURST D.E. KILL
BGP
BG
BGP GEN
HHK
XO
VXO
SUB CONV
4φ SHIFT
RF SWP
SIG DET
1/2
KILL DET
1/320/321
320/321 1H VCO
PB APC
REC APC
REC AFC
KILL
6dB AMP
Q558 Q560 Q566
NTSC 4.43
NTSC PAL 3.58
COMB FILT
DL 501
DL 503
DL 502
ATT
ACC DET
ACC AMP
BURST EMPH (REC)
MAIN CONV
N/P/S DET
P/S
FL505 4.43M BPF
3.58M BPF FL504
Q555 AMP
Q551 Q553
Q532
PB C AMP
FL503 LPF
SFR531
REC C LEVEL
REG 5V
R525
D505
Q513
PAL/NT FROM IC471 10 PIN
Q601
P/S DET
IC601 LA7311 PAL/MESECAM DETECT
BPF FL502 5.06M
BPF FL501 4.21M
Q508, Q510
R528
D405
D406
LP
EP
FROM B SERVO/SYS.CON C.B IC301 2 PIN
FROM B SERVO/SYS.CON C.B IC301 3 PIN
LP·EP (TO C HEAD AMP/AUDIO C.B HEAD AMP SECTION)
RF SWP (FROM B SERVO/SYS.CON C.B IC201 57 PIN)
SFR404
Q431 EQ
REC Y LEVEL
EQ AMP
Q471~Q473
VH403
CN652
IC651 BA7252S
AGC
PEAKING AMP
C AMP
PRE AMP
AMP
CURRENT AMP
REC ON
PB ON
CN651
CH-1 VIDEO HEAD
CH-2 VIDEO HEAD
PB VIDEO
PB Y
PB C
REC VIDEO
REC Y
REC C
CONTROL SIGNAL

BLOCK DIAGRAM – 2 (SERVO/SYSTEM CONTROL SECTION)

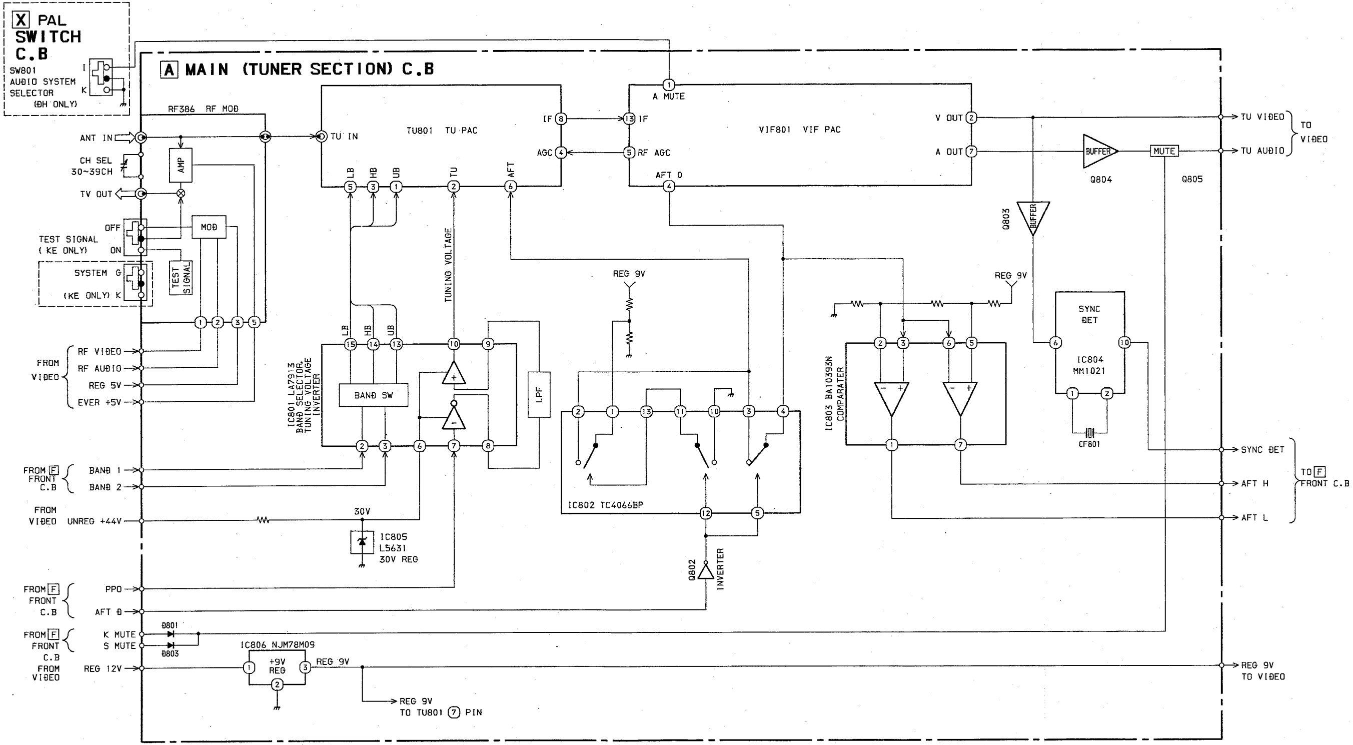

E AUTO TRACKING C.B
B SERVO/SYS.CON C.B
MECHANISM
IC301
HD49754NT (SERVO)
TO A MAIN C.B
LP
EP
SP
MODE OUT PUT
EVER +5V
Q305
SFR302
NTSC SW POS
SFR301
PAL SW POS
Q207
Q206
IC201
MB88515B-1639K
(SYSTEM CONTROL)
PAL/NTSC
SD310-A
Q301, Q302
Q303
FF VP GEN
DRUM SPEED
SPEED ERROR
D ERROR
PHASE ERROR
DRUM PG
DRUM FG
DRUM MOTOR
REC SAFETY SW
D PG
REG GND
D FG
D CONT
EVER +12V
UNREG GND
REC SAF
EVER +5V
CLOCK
Q309
X302 10.7MHz
X301 13.3MHz
Q307
Q306
EVER +5V
DRUM PHASE
DRUM REF
V SYNC SEP NOISE DET
RFSWP
JOG VD
COMP SYNC
TO VIDEO
RF SWP
Q208~210
MATRIX
LP
S/E
N/P
KI0
KI1
KI3
KO3
CN303
CTL HEAD
CTL (-)
CTL (+)
REG GND
CTL VISS DET
PB
REC
VISS
SERIAL DATA
S-DATA
S-CLK
S DATA
S CLK
SC301-A
CAPSTAN FG
CAPSTAN MOTOR
LOADING MOTOR
MODE SWITCH
REG GND
REEL FG
EVER +5V
PH-A
C FG
CM (-)
CM (+)
LM (+)
LM (-)
MS 4
MS 3
MS 2
MS 1
KO 5
PB/CTL
C385
COUNT DOWN
COUNT DOWN
CFG
Q304
CAP SPEED
CLOCK
CAP REF
CAP PHASE
CAD ERROR
CTLP
PAUSE
TO AUTO TRACKING
PAUSE
CM-F
CM-R
Q312
Q310, Q311
D301
IC302
BA6219B
CAPSTAN MOTOR DRIVER
CONTROL
OUT PUT
D221
IC203
LB1641
LOADING MOTOR DRIVER
ACK
TR RST
JOG
EVER +5V
IC202
PST523D
RST
(RESET)
EX
CL201
6.0MHZ
X
TL-R
TL-F
IC951 HD404302RA36S
PAL/NTSC
EX
CL951 4.0M HZ
X
ACK
TR RST
JOG
V LEV
AUTO/MAN
AVCC
EVER +5V
CTL P
RF SWP
PAUSE
FROM SERVO/SYS.CON
(AUTO TRACKING)
Q951 ~ Q954
ENVE DET
PB C AT
FROM VIDEO
FROM FRONT
V SPEED DET C.B
IC1
MB88202H-1093
TAPE MODE DETECT
JOG
RST
N/P
S/E
LP
CTLP
CFG
IC2
TC7W04R
CLOCK GEN.
EVER 5V

BLOCK DIAGRAM – 3 (SYSTEM CONTROL SECTION)


B SERVO/SYS.CON C.B
F FRONT C.B
IC 902
E² ROM
ST93C46AB1
DO SK DI CS
STATE DETECTION
START SENSOR
END SENSER
REEL SENSOR
CASSETTE START
CASSTTE IN
CASSETTE OUT
MODE SW1
MODE SW2
MODE SW3
MODE SW4
REC SAFETY SW
E AUTO TRACKING C.B
TR LED
AUTO/MAN
IC 951
K A/M
TR CLK
TR DATA
ACK
TR RST
AUTO TRACKING
HD404302RA36S
MATRIX
SYSTEM CONTROL
MB88515B-1639K
KI2
KI1
KI0
KO4
ACK
TR RST
IC 201
TIMER
MICRO PROCESSOR
UPD75216ACW-W26
IC 301
S-CLK
S-DATA
S-CLK
S-DATE
SERVO
HD49754NT
SYNC
READY
REQ
SO
SI
SCK
RST
X EX
CL201
6MHz
EVER +5V
RESET
PST523D
IC 202
EVER+5V
VCR
ROM CS
ROM DO
ROM CLK
ROM DI
IC 901
PAL
MESECAM
NTSC3.58
NTSC4.43
G1~G10
A~J
10
10
8
4
KM0 ~ KM3
FL 901
(DISPLAY)
KEY MATRIX
D928
AUTO TRACKING
REG 5V
R
Q901
D924
PAL
D925
MESECAM
D926
NTSC3.58
D927
NTSC4.43
REG 5V
SW 931
AUTO TRACKING
--- AUTO
--- MANUAL
SYNC DET
S MUTE
AFT H
AFT L
PPO
K MUTE
TU CS
TU SCK
TU SO
A MAIN C.B
BUZZER
B SERVO/SYS.CON C.B
REMOCON
REMOTE CONTROL SIGNAL
IC903
SBX1610-52
REMOTE SENSOR
X1 X2 XT1 XT2
X902
4.19MHz
X901
32.768KHz

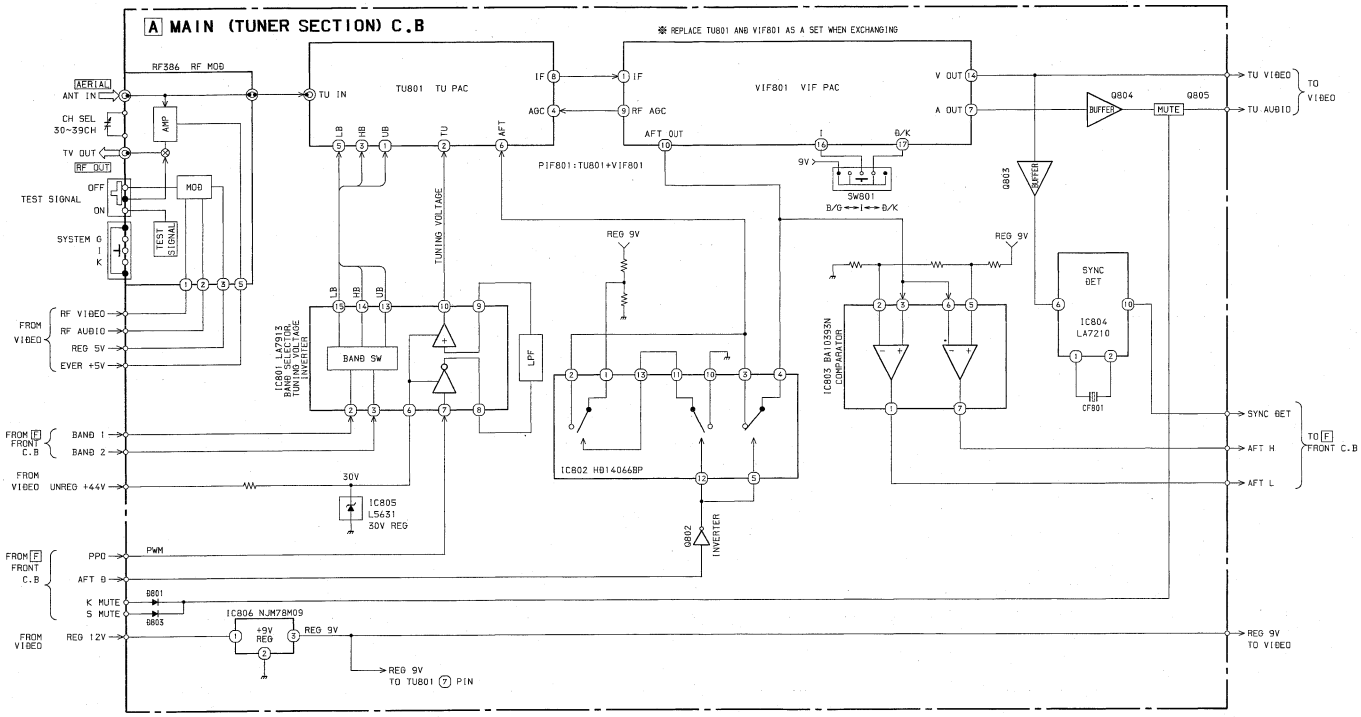

VIDEO
D DIGITAL C.B
TO A MAIN C.B
CN1 (1/5)
BYPASS
DIG NT
DIG PAL
RFSWP
FLASH
DSTILL
NT3
NT4
MES/PAL
JOG2
REG GND
IC14, 15, 16, 17 INPUT SYSTEM DECODER
IC12, 14, 15, 16, 17 OUTPUT SYSTEM DECODER
IC12 TC74HC157F
14, 15 TC74HC02AF
16 MC74HC08AF
17 TC4030BF
IC13 HD74HC221FP (FLASH TIMER)
IC15
MM
BYPASS
MUTE
ENC3
ENC4
RSD
WE
WSD
JOG2
DIG 5V
IC18 PST523D RESET
IC7 TC74HCU04AF
VCO
TC5 AFC ADJ.
IC21 TC7W04F
Q15
NOV DETECT
DET V
YCLK
XCLK
IC1 MB87813A
COMPOSITION SYNC
CN1 (2/5)
DIG Y
Q1
BUFF
IC23 CXL5001M
1H DL
FL1
LPF
Q205
NT/PAL
Q16
Q202
Q203
Q206 Q207
FL4
SFR1 Y ADC INPUT LEVEL ADJ.
Q2, 3, 4
V-SYNC
IC24 TC7SU04F
WDB
AFC
INTERFACE
SYNC GEN.
WRITE TIMING GEN.
READ TIMING GEN.
IC10 MB40778FPT (8BIT D/A CONV)
YDACK
FILTERS
1HDL
D/A
LPF
FL3
Q30, 31
Y OUTPUT LEVEL ADJ.
IC11 NJM2246M (SWITCH)
CN2
REG 9V
3FSC
CN1 (3/5)
DIG C
Q5
SYNC SEP
ACC
APC
DEMOD
FSC
IC4 M51271FP (CHROMA DECODER)
COLOR DIFF. SIGNAL ADC INPUT LEVEL ADJ.
SFR2
Q50, 51
Q52, 53
SFR9
IC19 CXL5003M
1HDL
Q54, 57
Q58, 59
Q60, 61
SFR10
Q62, 65
IC20 CXL5003M
CLK
SFR9, 10 COLOR DIFFERENCE A/D OFFSET ADJ.
Q291
IC22 TC7SU04F
X5 13.3M
CLAMP
SEL Y
SEL U
SEL V
ADCK
CLP
A/D
IC6 UPC661G (A/D CONV.)
MPX
I/O MPX
DE-MPX
SW
DEMOD
CDACK
IC9 MB40776FPT (6BIT D/A CONV)
Q20
BUFF
FL2
BPF
Q21
Q211
Q212
SFR5
SFR6
Q33 Q34
C OUTPUT LEVEL ADJ.
BUFF Q35
ENC3
REG 5V
1/2FIELD MEMORY
IC2
IC3
LH2464-10 (4BIT-64K WORD DRAM)
Q272
Q271
V-SYNC
FF
IC25 MC74HC74AF
DIG 5V
ENC3, 4
ENCK
OSC
X3 14.31MHz
X4 17.73MHz
IC8 TC74HC00AF (CHROMA ENCODE CLOCK GEN.)
DEC4
NT3
REG 5V
Q44 Q46
Q45 Q47
SFR3
SFR4
Q17
SFR3 N TINT
SFR4 P TINT
TC1
TC2
X1 14.31MHz
X2 17.73M
Q18
TC1 DECODER APC ADJ. (3.58MODE)
TC2 DECODER APC ADJ. (4.43MODE)
CN1 (4/5)
TH V
DIG V
CN1 (5/5)
REG 5V
REG GND
DIG 5V
DIG GND
DIGITAL Y
DIGITAL C
DIGITAL VIDEO
R-Y (V)
B-Y (U)

BLOCK DIAGRAM – 5 (TUNER SECTION) MG330KE, DH

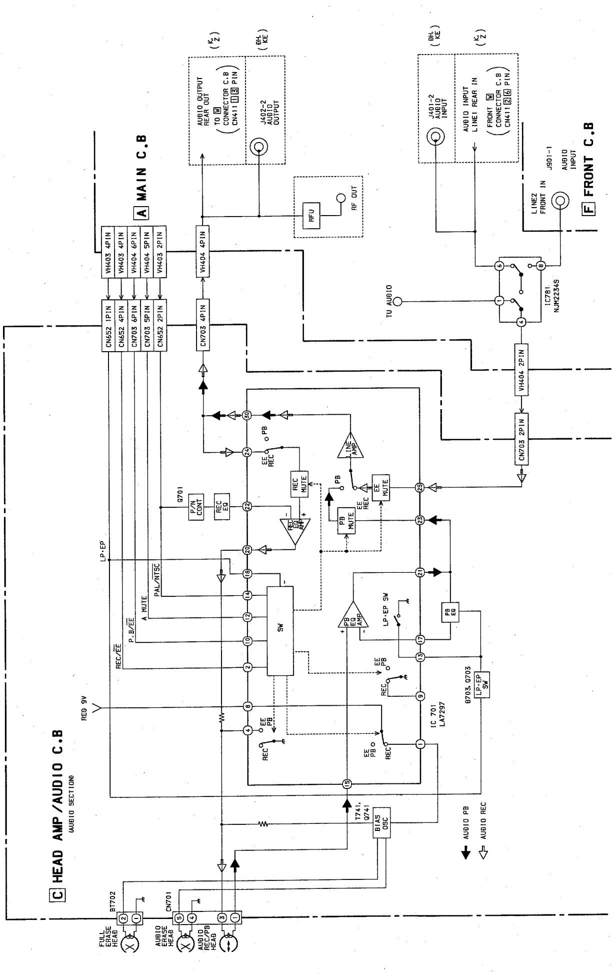


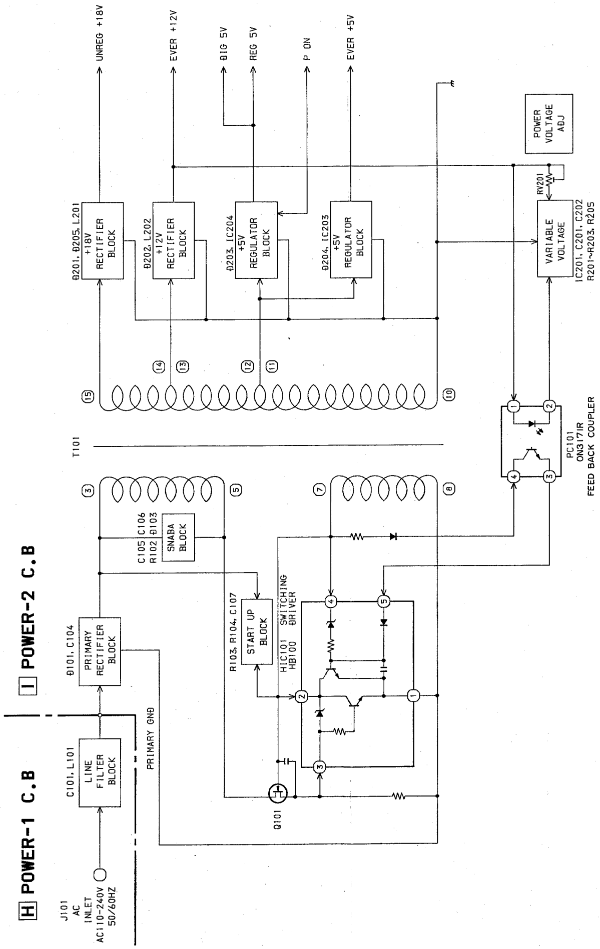
X PAL SWITCH C.B
SW801
AUDIO SYSTEM SELECTOR
(DH ONLY)
I
K
A MAIN (TUNER SECTION) C.B
RF386 RF MOD
ANT IN
CH SEL 30~39CH
TV OUT
AMP
MOD
TEST SIGNAL
(KE ONLY)
OFF
ON
SYSTEM G
(KE ONLY) K
TEST SIGNAL
1
2
3
5
FROM VIDEO
RF VIDEO
RF AUDIO
REG 5V
EVER +5V
TU IN
TU801 TU PAC
IF 8
AGC 4
LB 5
HB 3
UB 1
TU 2
AFT 6
TUNING VOLTAGE
IC801 LA7913 BAND SELECTOR, TUNING VOLTAGE INVERTER
LB 15
HB 14
UB 13
10
9
BAND SW
2
3
6
7
8
LPF
FROM F FRONT C.B
BAND 1
BAND 2
FROM VIDEO
UNREG +44V
30V
IC805 L5631 30V REG
FROM F FRONT C.B
PPO
AFT D
FROM F FRONT C.B
K MUTE
S MUTE
D801
D803
FROM VIDEO
REG 12V
IC806 NJM78M09
+9V REG
1
2
3
REG 9V
REG 9V TO TU801 7 PIN
1 A MUTE
13 IF
5 RF AGC
AFT 0 4
VIF801 VIF PAC
V OUT 2
A OUT 7
REG 9V
IC802 TC4066BP
2 1 13 11 10 3 4
12
5
Q802 INVERTER
BUFFER
Q804
MUTE
Q805
Q803 BUFFER
REG 9V
IC803 BA10393N COMPARATER
2 3 6 5
1 7
SYNC DET
IC804 MM1021
6 10 1 2
CF801
TU VIDEO
TU AUDIO
TO VIDEO
SYNC DET
AFT H
AFT L
TO F FRONT C.B
REG 9V TO VIDEO

BLOCK DIAGRAM – 6 (TUNER SETION) MG350K, Z

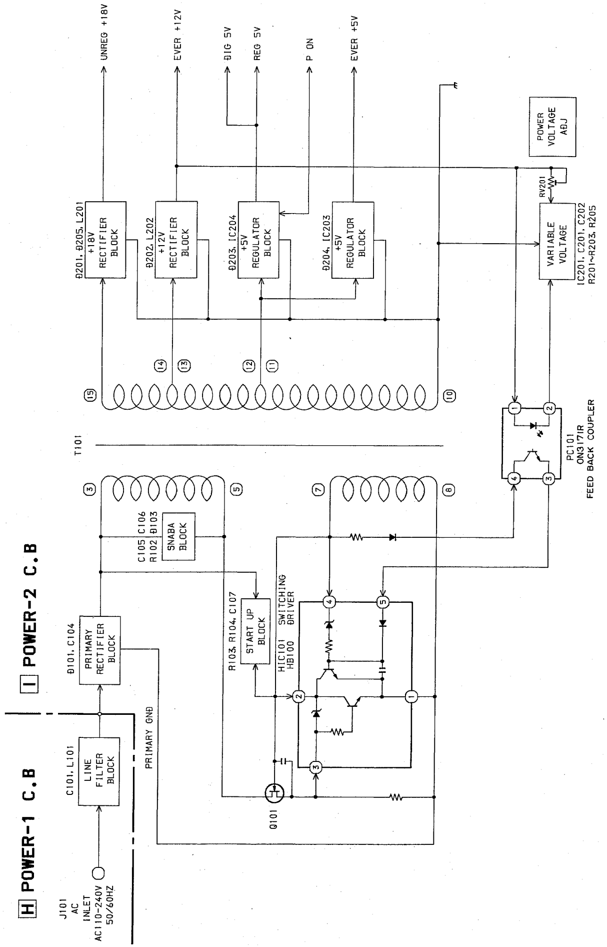

A MAIN (TUNER SECTION) C.B
※ REPLACE TU801 AND VIF801 AS A SET WHEN EXCHANGING
RF386 RF MOD
AERIAL
ANT IN
CH SEL
30~39CH
TV OUT
RF OUT
TEST SIGNAL
OFF
ON
SYSTEM G
I
K
AMP
MOD
TEST SIGNAL
TU IN
TU801 TU PAC
IF
AGC
LB
HB
UB
TU
AFT
PIF801:TU801+VIF801
VIF801 VIF PAC
IF
RF AGC
AFT OUT
V OUT
A OUT
I
D/K
9V
SW801
B/G ↔ I ↔ D/K
Q804
BUFFER
Q805
MUTE
Q803
BUFFER
TU VIDEO
TU AUDIO
TO VIDEO
TUNING VOLTAGE
REG 9V
REG 9V
SYNC DET
IC804
LA7210
CF801
IC801 LA7913
BAND SELECTOR,
TUNING VOLTAGE
INVERTER
BAND SW
LPF
IC802 HD14066BP
IC803 BA10393N
COMPARATOR
FROM VIDEO
RF VIDEO
RF AUDIO
REG 5V
EVER +5V
FROM F FRONT C.B
BAND 1
BAND 2
FROM VIDEO
UNREG +44V
30V
IC805
L5631
30V REG
SYNC DET
AFT H
AFT L
TO F FRONT C.B
Q802
INVERTER
FROM F FRONT C.B
PPO
PWM
AFT D
K MUTE
S MUTE
D801
D803
IC806 NJM78M09
+9V REG
REG 9V
FROM VIDEO
REG 12V
REG 9V TO TU801 ⑦ PIN
REG 9V TO VIDEO

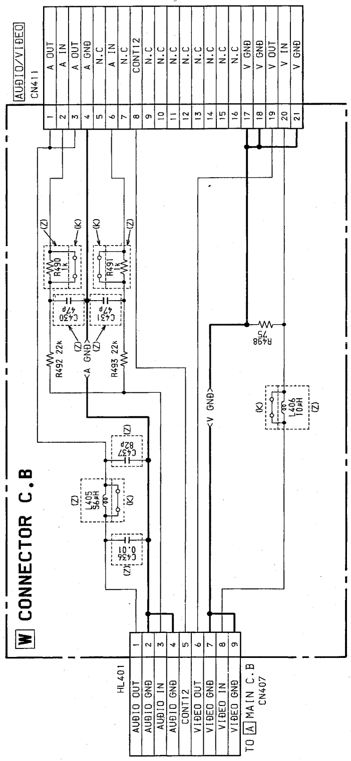
BLOCK DIAGRAM – 7 (AUDIO/POWER UNIT SECTION)


C HEAD AMP/AUDIO C.B
(AUDIO SECTION)
A MAIN C.B
F FRONT C.B
AUDIO OUTPUT REAR OUT TO M CONNECTOR C.B CN411 1 3 PIN
J402-2 AUDIO OUTPUT
J401-2 AUDIO INPUT
AUDIO INPUT LINE1 REAR IN FRONT M CONNECTOR C.B CN411 2 6 PIN
LINE2 FRONT IN
J901-1 AUDIO INPUT
RFU
RF OUT
TU AUDIO
IC781 NJM2234S
VH403 4PIN
VH403 4PIN
VH404 6PIN
VH404 5PIN
VH403 2PIN
VH404 4PIN
CN652 1PIN
CN652 4PIN
CN703 6PIN
CN703 5PIN
CN652 2PIN
CN703 4PIN
VH404 2PIN
CN703 2PIN
LP·EP
PAL/NTSC
A MUTE
P.B/EE
REC/EE
REG 9V
Q701
P/N CONT
REC EQ
REC EQ AMP
REC MUTE
LINE AMP
PB MUTE
EE MUTE
PB EQ AMP
PB EQ
LP·EP SW
SW
EE REC
PB
IC 701 LA7297
Q703, Q703 LP·EP SW
T741, Q741 BIAS OSC
BT702
CN701
FULL ERASE HEAD
AUDIO ERASE HEAD
AUDIO REC/PB HEAD
AUDIO PB
AUDIO REC

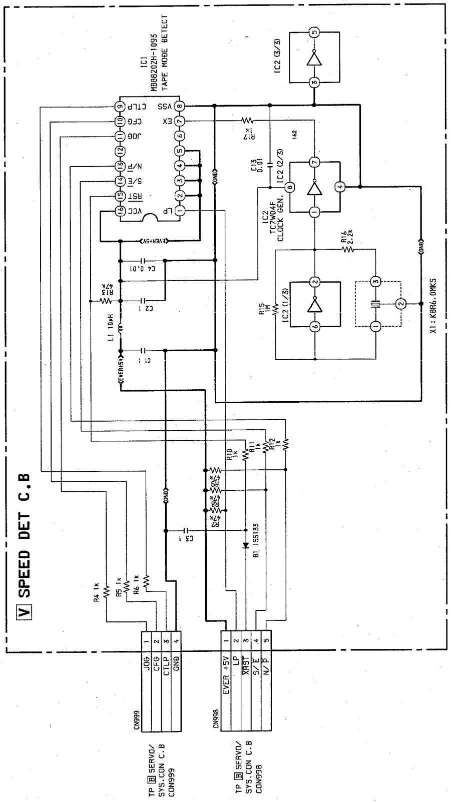

H POWER-1 C.B
I POWER-2 C.B
J101 AC INLET AC110~240V 50/60HZ
C101, L101 LINE FILTER BLOCK
D101, C104 PRIMARY RECTIFIER BLOCK
PRIMARY GND
C105, C106 R102, D103 SNABA BLOCK
R103, R104, C107 START UP BLOCK
HIC101 HB100 SWITCHING DRIVER
Q101
T101
D201, D205, L201 +18V RECTIFIER BLOCK
D202, L202 +12V RECTIFIER BLOCK
D203, IC204 +5V REGULATOR BLOCK
D204, IC203 +5V REGULATOR BLOCK
IC201, C201, C202 R201~R203, R205 VARIABLE VOLTAGE
RV201
POWER VOLTAGE ADJ
PC101 ON3171R FEED BACK COUPLER
UNREG +18V
EVER +12V
DIG 5V
REG 5V
P ON
EVER +5V

SCHEMATIC DIAGRAM – 1 (CONNECTOR SECTION) MG350K, Z

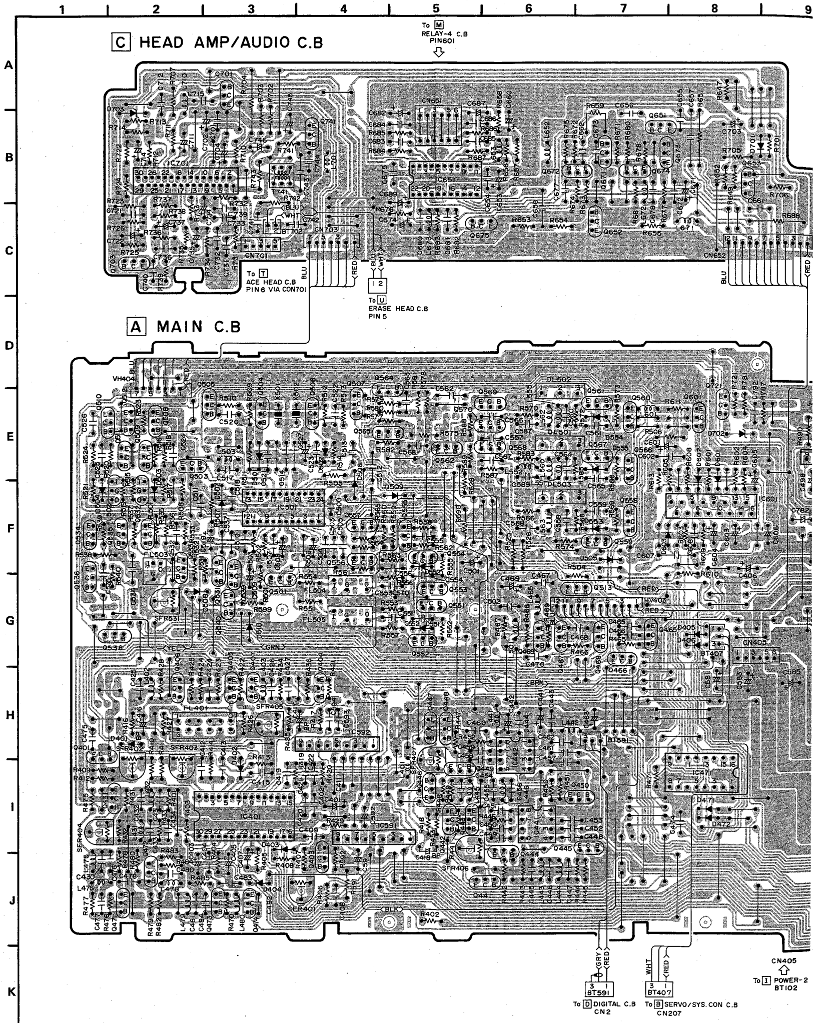

H POWER-1 C.B
I POWER-2 C.B
J101
AC
INLET
AC110-240V
50/60HZ
C101, L101
LINE FILTER BLOCK
D101, C104
PRIMARY RECTIFIER BLOCK
PRIMARY GND
C105 C106
R102 D103
SNABA BLOCK
R103, R104, C107
START UP BLOCK
HIC101 SWITCHING
HB100 DRIVER
Q101
T101
D201, D205, L201
+18V RECTIFIER BLOCK
D202, L202
+12V RECTIFIER BLOCK
D203, IC204
+5V REGULATOR BLOCK
D204, IC203
+5V REGULATOR BLOCK
UNREG +18V
EVER +12V
DIG 5V
REG 5V
P ON
EVER +5V
POWER VOLTAGE ADJ
RV201
VARIABLE VOLTAGE
IC201, C201, C202
R201~R203, R205
PC101
ON3171R
FEED BACK COUPLER


AUDIO/VIDEO
CN411
1 A OUT
2 A IN
3 A OUT
4 A GND
5 N.C
6 A IN
7 N.C
8 CONT12
9 N.C
10 N.C
11 N.C
12 N.C
13 N.C
14 N.C
15 N.C
16 N.C
17 V GND
18 V GND
19 V OUT
20 V IN
21 V GND
(Z)
(K)
R490 1k
R491 1k
C430 47p
C431 47p
R492 22k
R493 22k
A GND
R498 75
V GND
L406 10µH
C437 82p
L405 56µH
C436 0.01
W CONNECTOR C.B
HL401
1 AUDIO OUT
2 AUDIO GND
3 AUDIO IN
4 AUDIO GND
5 CONT12
6 VIDEO OUT
7 VIDEO GND
8 VIDEO IN
9 VIDEO GND
TO A MAIN C.B
CN407

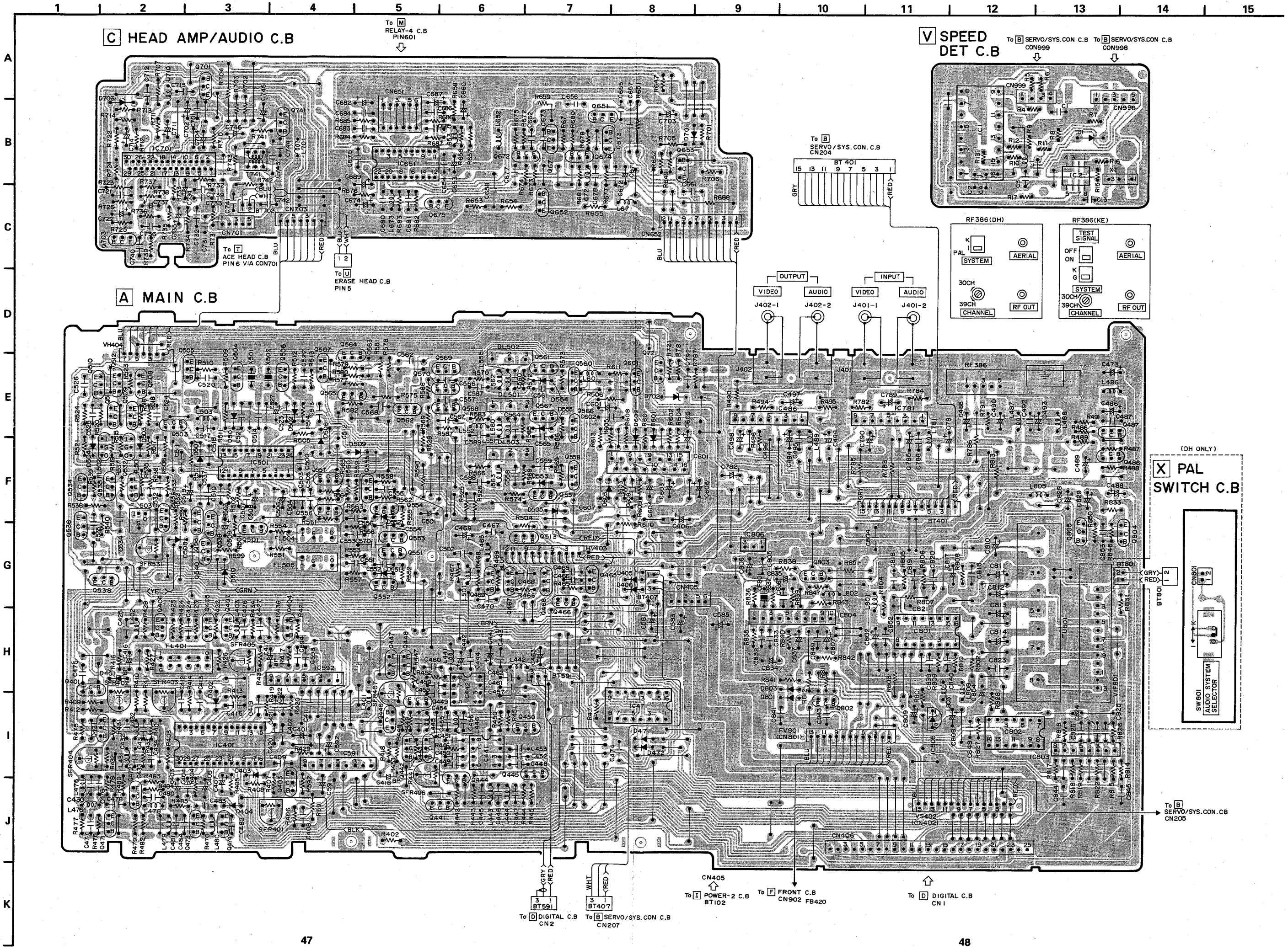
SCHEMATIC DIAGRAM – 2 (SPEED DETECTOR SECTION)


V SPEED DET C.B
IC1 MB88202H-1093 TAPE MODE DETECT
IC2 TC7W04F CLOCK GEN.
IC2 (1/3)
IC2 (2/3)
IC2 (3/3)
X1: KBR6.0MKS
L1 10μH
B1 1SS133
CTLP
CFG
JOG
N/P
S/E
RST
VCC
VSS
EX
LP
(EVER+5V)
(GND)
CN999
JOG
CFG
CTLP
GND
CN998
EVER +5V
LP
XRST
S/E
N/P
TP B SERVO/ SYS.CON C.B CON999
TP B SERVO/ SYS.CON C.B CON998

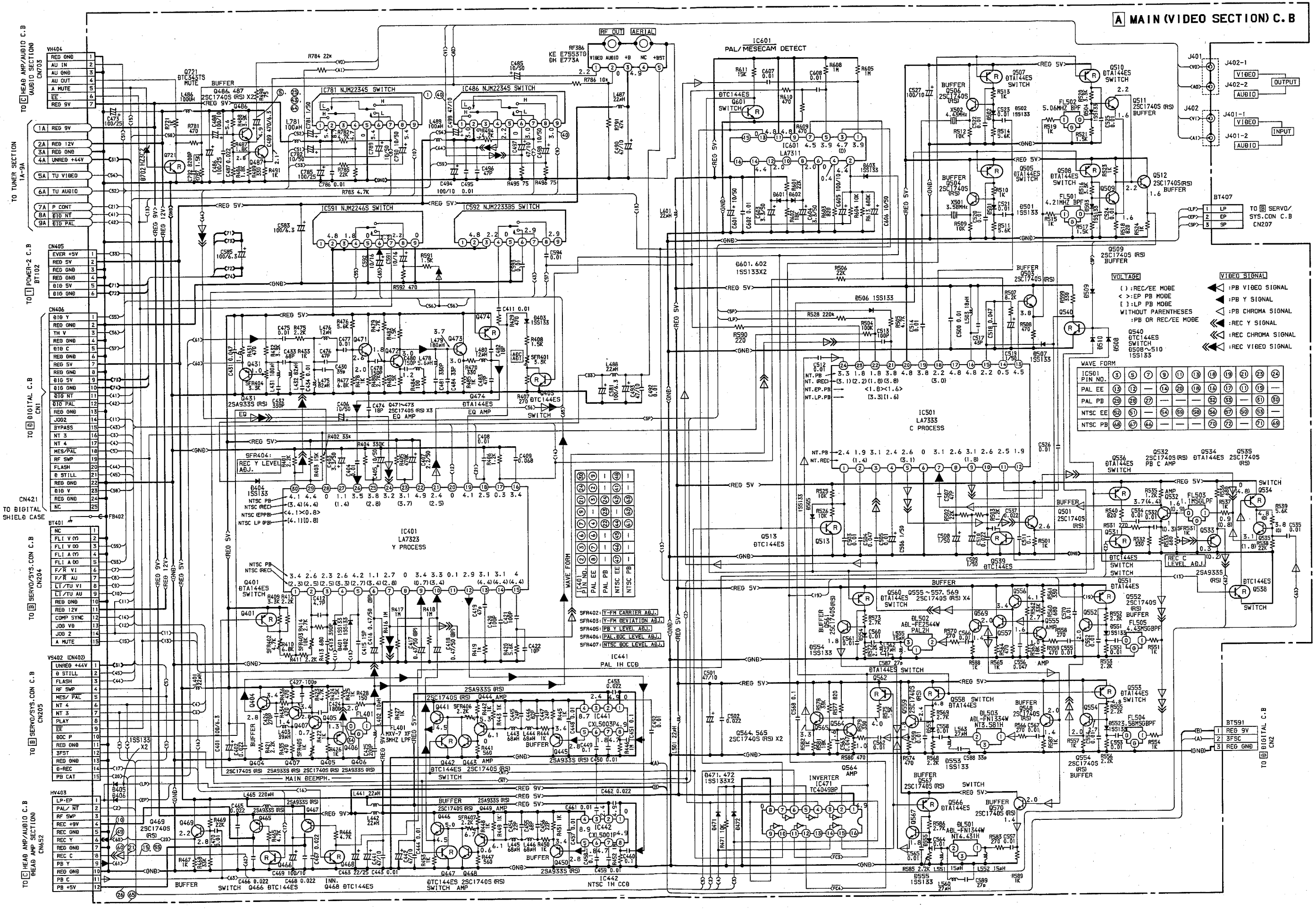
WIRING – 1 (VIDEO/TUNER/AUDIO SECTION) MG330KE, DH


C HEAD AMP/AUDIO C.B
To M RELAY-4 C.B PIN601
To T ACE HEAD C.B PIN6 VIA CON701
To U ERASE HEAD C.B PIN 5
A MAIN C.B
To D DIGITAL C.B CN2
To B SERVO/SYS.CON C.B CN207
CN405
To I POWER-2 BT102
BT591
BT407
1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
K

WIRING – 1 (VIDEO/TUNER/AUDIO SECTION) MG330KE, DH


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C D E F G H I J K
C HEAD AMP/AUDIO C.B
To M RELAY-4 C.B PIN601
To T ACE HEAD C.B PIN6 VIA CON701
To U ERASE HEAD C.B PIN5
To B SERVO/SYS.CON. C.B CN204
BT 401
V SPEED DET C.B
To B SERVO/SYS.CON C.B CON999
To B SERVO/SYS.CON C.B CON998
RF386(DH)
RF386(KE)
SYSTEM
AERIAL
CHANNEL
RF OUT
TEST SIGNAL
OFF
ON
30CH
39CH
PAL
OUTPUT
INPUT
VIDEO
AUDIO
J402-1
J402-2
J401-1
J401-2
A MAIN C.B
(DH ONLY)
X PAL SWITCH C.B
SW801 AUDIO SYSTEM SELECTOR
To B SERVO/SYS.CON.CB CN205
CN405
To I POWER-2 C.B BT102
To F FRONT C.B CN902 FB420
To D DIGITAL C.B CN1
To D DIGITAL C.B CN2
To B SERVO/SYS.CON C.B CN207
BT591
BT407
CN406
VS402 (CN402)

SCHEMATIC DIAGRAM – 3 (VIDEO SECTION) MG330KE, DH



A MAIN (VIDEO SECTION) C.B
TO C HEAD AMP/AUDIO C.B (AUDIO SECTION) CN703
TO TUNER SECTION 1A-9A
TO I POWER-2 C.B BT102
TO B DIGITAL C.B CN1
CN421 TO DIGITAL SHIELD CASE
TO B SERVO/SYS.CON C.B CN204
TO B SERVO/SYS.CON C.B CN205
TO C HEAD AMP/AUDIO C.B (HEAD AMP SECTION) CN652
TO B SERVO/SYS.CON C.B CN207
TO B DIGITAL C.B CN2
RF OUT
AERIAL
RF386 KE E7553TG DH E773A
IC601 PAL/MESECAM DETECT
IC601 LA7311
IC781 NJM2234S SWITCH
IC486 NJM2234S SWITCH
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
IC401 LA7323 Y PROCESS
IC501 LA7333 C PROCESS
IC441 PAL 1H CCD
IC442 NTSC 1H CCD
IC471 TC4049BP INVERTER
J401 J402 VIDEO AUDIO OUTPUT INPUT
SFR404: REC Y LEVEL ADJ.
SFR402: Y-FM CARRIER ADJ.
SFR403: Y-FM DEVIATION ADJ.
SFR405: PB Y LEVEL ADJ.
SFR406: PAL.DOC LEVEL ADJ.
SFR407: NTSC DOC LEVEL ADJ.
SFR531 REC C LEVEL ADJ.
MAIN DEEMPH.
EQ AMP

WAVE FORM

IC401 PIN NO.	PAL EE	PAL PB	NTSC EE	NTSC PB
②	⑧	–	㊼	–
③	⑦	–	㊻	–
⑥	⑥	–	㊺	–
⑦	④	㉒	㊹	(61)
⑨	–	㉓	–	(62)
㉑	③	㉔	㊷	(63)
㉔	②	–	㊶	–
㉚	⑨	–	㊽	–

VOLTAGE

( ):REC/EE MODE
< >:EP PB MODE
[ ]:LP PB MODE
WITHOUT PARENTHESES
:PB OR REC/EE MODE

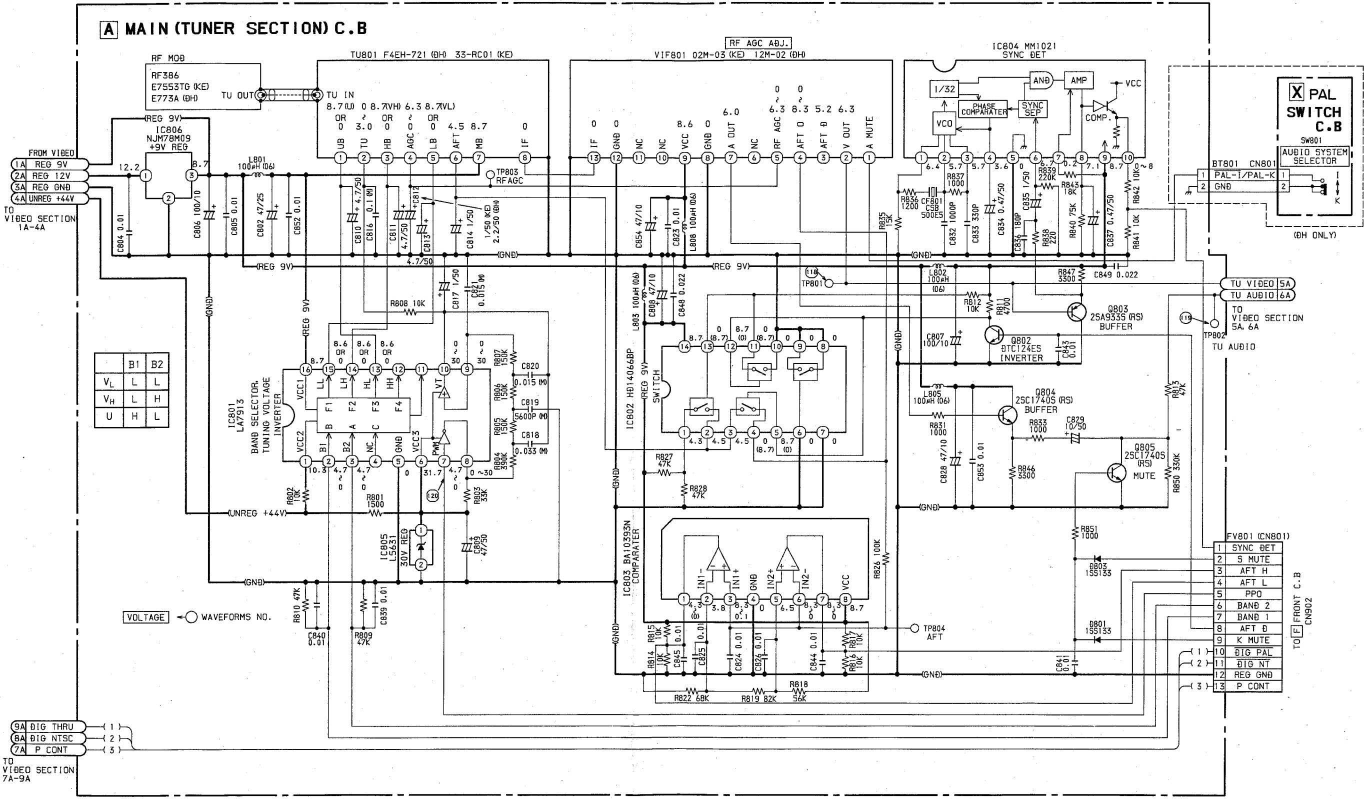
VIDEO SIGNAL

◀◁ :PB VIDEO SIGNAL
◀ :PB Y SIGNAL
◁ :PB CHROMA SIGNAL
≪◀ :REC Y SIGNAL
≪◁ :REC CHROMA SIGNAL
≪◀◁ :REC VIDEO SIGNAL

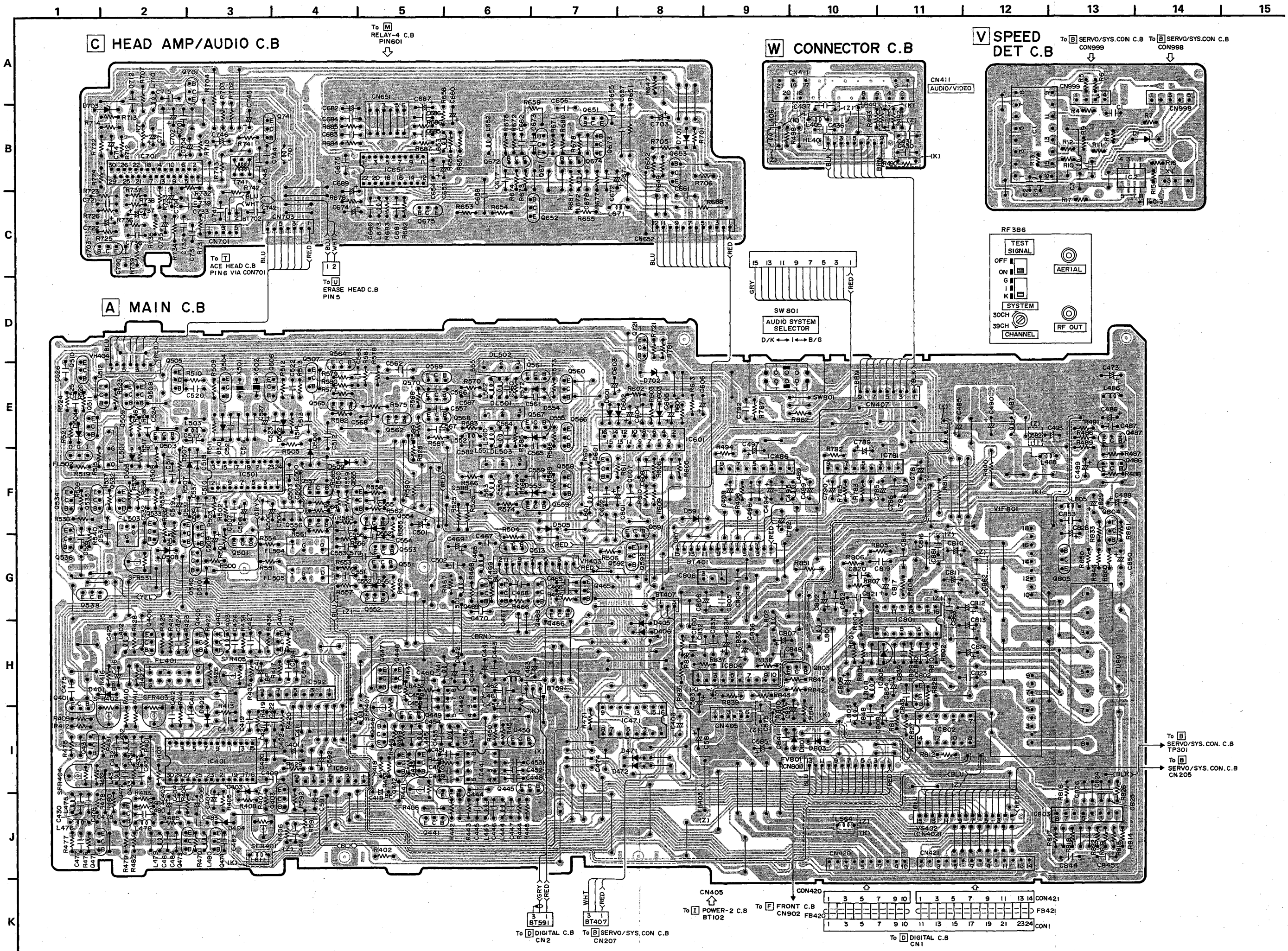
WAVE FORM

IC501 PIN NO.	③	⑤	⑦	⑨	⑪	⑬	⑱	⑲	㉑	㉓	㉔
PAL EE	⑬	⑫	—	⑭	⑳	⑱	⑯	⑰	⑪	⑲	—
PAL PB	㉙	㉘	㉗	—	—	—	㉜	㉝	—	㉛	㉚
NTSC EE	(52)	(51)	—	(54)	(59)	(58)	(56)	(57)	㊿	(53)	—
NTSC PB	(68)	(67)	(66)	—	—	—	(70)	(72)	—	(71)	(69)

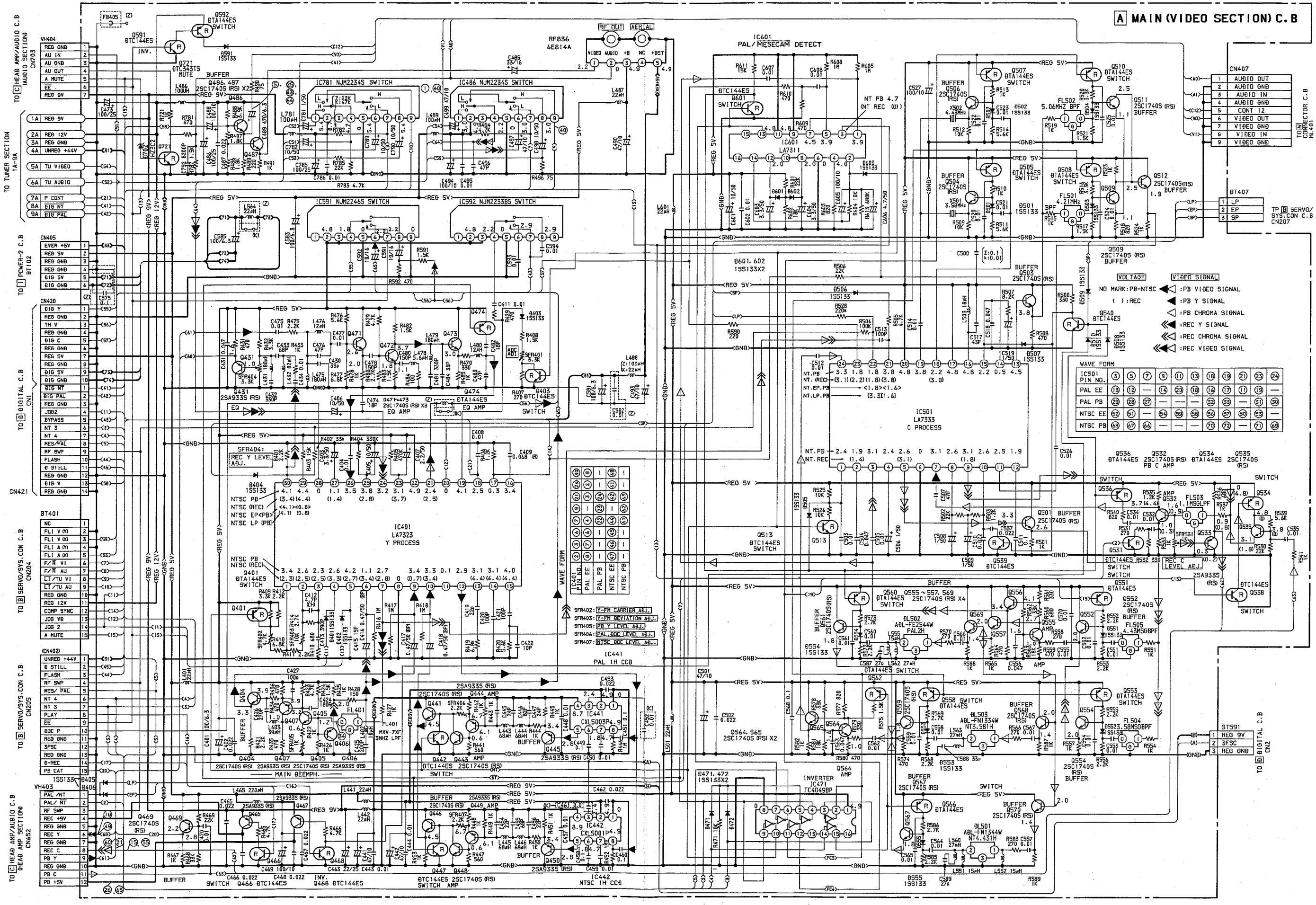
SCHEMATIC DIAGRAM – 4 (TUNER SECTION) MG330KE, DH


A MAIN (TUNER SECTION) C.B
RF MOD
RF386
E7553TG (KE)
E773A (DH)
TU OUT
TU IN
TU801 F4EH-721 (DH) 33-RC01 (KE)
VIF801 02M-03 (KE) 12M-02 (DH)
RF AGC ADJ.
IC804 MM1021
SYNC DET
1/32
PHASE COMPARATER
SYNC SEP
AND
AMP
VCO
COMP.
VCC
IC806
NJM78M09
+9V REG
FROM VIDEO
1A REG 9V
2A REG 12V
3A REG GND
4A UNREG +44V
TO VIDEO SECTION 1A-4A
L801 100μH (06)
TP803 RFAGC
IC801 LA7913
BAND SELECTOR, TUNING VOLTAGE INVERTER
IC802 HD14066BP
SWITCH
IC803 BA10393N
COMPARATER
IC805 L5631
30V REG
Q802 DTC124ES INVERTER
Q803 2SA933S (RS) BUFFER
Q804 2SC1740S (RS) BUFFER
Q805 2SC1740S (RS) MUTE
D801 1SS133
D803 1SS133
TP801
TP802
TP804 AFT
TU VIDEO 5A
TU AUDIO 6A
TO VIDEO SECTION 5A, 6A
TU AUDIO
X PAL SWITCH C.B
SW801
AUDIO SYSTEM SELECTOR
BT801 CN801
PAL-I/PAL-K
GND
(DH ONLY)
FV801 (CN801)
1 SYNC DET
2 S MUTE
3 AFT H
4 AFT L
5 PPO
6 BAND 2
7 BAND 1
8 AFT D
9 K MUTE
10 DIG PAL
11 DIG NT
12 REG GND
13 P CONT
TO F FRONT C.B CN902
9A DIG THRU
8A DIG NTSC
7A P CONT
TO VIDEO SECTION 7A-9A
VOLTAGE
WAVEFORMS NO.
B1 B2
VL L L
VH L H
U H L

WIRING – 2 (VIDEO/TUNER/AUDIO SECTION) MG350K, Z


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
C HEAD AMP/AUDIO C.B
To M RELAY-4 C.B PIN601
W CONNECTOR C.B
CN411 AUDIO/VIDEO
V SPEED DET C.B
To B SERVO/SYS.CON C.B CON999
To B SERVO/SYS.CON C.B CON998
CN703
CN701
CN651
IC651
IC701
CN652
To T ACE HEAD C.B PIN6 VIA CON701
To U ERASE HEAD C.B PIN5
RF386
TEST SIGNAL
OFF
ON
AERIAL
G
I
K
SYSTEM
30CH
39CH
CHANNEL
RF OUT
SW801
AUDIO SYSTEM SELECTOR
D/K ↔ I ↔ B/G
A MAIN C.B
IC501
IC601
IC486
IC781
IC801
IC802
IC803
IC804
IC401
IC471
IC591
IC592
VIF801
TU801
CN407
CN405
CN420
CN421
FV801 (CN801)
VS402 (CN402)
BT401
BT407
BT591
To B SERVO/SYS. CON. C.B TP301
To B SERVO/SYS. CON. C.B CN205
BT591
To D DIGITAL C.B CN2
BT407
To B SERVO/SYS. CON C.B CN207
CN405
To I POWER-2 C.B BT102
CN420
To F FRONT C.B CN902
FB420
CON421
FB421
CON1
To D DIGITAL C.B CN1

SCHEMATIC DIAGRAM – 5 (VIDEO SECTION) MG350K, Z


A MAIN (VIDEO SECTION) C.B
TO C HEAD AMP/AUDIO C.B (AUDIO SECTION) CN703
VH404
REG GND
AU IN
AU GND
AU OUT
A MUTE
EE
REG 9V
TO TUNER SECTION TA-9A
REG 9V
REG 12V
REG GND
UNREG +44V
TU VIDEO
TU AUDIO
P CONT
DIG NT
DIG PAL
TO I POWER-2 C.B BT102
CN405
EVER +5V
REG 5V
REG GND
DIG 5V
DIG GND
TO D DIGITAL C.B CN1
CN420
CN421
TO B SERVO/SYS.CON C.B CN204
BT401
TO B SERVO/SYS.CON C.B CN205
CN402
TO C HEAD AMP/AUDIO C.B (HEAD AMP SECTION) CN652
VH403
Q592 DTA144ES SWITCH
Q591 DTC144ES INV.
Q721 DTC343TS MUTE
Q486, 487 2SC1740S (RS) X2
BUFFER
IC781 NJM2234S SWITCH
IC486 NJM2234S SWITCH
IC591 NJM2246S SWITCH
IC592 NJM2233BS SWITCH
RF836 6E814A
RF OUT
AERIAL
VIDEO AUDIO +B NC +BST
IC601 PAL/MESECAM DETECT
Q601 DTC144ES SWITCH
IC601 LA7311
NT PB 4.7 (NT REC (0))
D601, 602 1SS133X2
Q431 2SA933S (RS) EQ
Q471~473 2SC1740S (RS) X3 EQ AMP
Q474 DTA144ES EQ AMP
Q403 DTC144ES SWITCH
SFR404: REC Y LEVEL ADJ.
IC401 LA7323 Y PROCESS
NTSC PB
NTSC (REC)
NTSC EP<PB>
NTSC LP (PB)
Q401 DTA144ES SWITCH
D404 1SS133
Q404 Q407 Q405 Q406 2SC1740S (RS) 2SA933S (RS) 2SC1740S (RS) 2SA933S (RS)
MAIN DEEMPH.
FL401 MXV-7XF 3MHZ LPF
IC441 PAL 1H CCD
IC441 CXL5003P
Q441 Q442 Q443 Q444 Q445
DTC144ES 2SC1740S (RS) SWITCH
2SA933S (RS) AMP
BUFFER
IC442 CXL5001P
IC442 NTSC 1H CCD
Q446 Q447 Q448 Q449 Q450
DTC144ES 2SC1740S (RS) SWITCH AMP
Q469 2SC1740S (RS)
Q465 Q466 Q467 Q468
BUFFER
SWITCH Q466 DTC144ES
INV. Q468 DTC144ES
Q505 Q507 DTA144ES SWITCH
Q510 DTA144ES SWITCH
Q506 2SC1740S (RS) BUFFER
X502 4.43MHz
FL502 5.06MHZ BPF
Q511 2SC1740S (RS) BUFFER
Q504 2SC1740S (RS) BUFFER
X501 3.58MHz
Q508 DTA144ES SWITCH
FL501 4.21MHz BPF
Q512 2SC1740S (RS) BUFFER
Q509 2SC1740S (RS) BUFFER
Q503 2SC1740S (RS) BUFFER
Q540 DTC144ES
IC501 LA7333 C PROCESS
NT.PB
NT. (REC)
NT.EP.PB
NT.LP.PB
Q501 2SC1740S (RS) BUFFER
Q513 DTC144ES SWITCH
Q539 DTC144ES
Q536 DTA144ES SWITCH
Q532 2SC1740S (RS) PB C AMP
Q534 DTA144ES SWITCH
Q535 2SC1740S (RS)
FL503 1.1MHz LPF
Q531 2SA933S (RS)
REC C LEVEL ADJ.
Q538 DTC144ES SWITCH
Q551 DTA144ES SWITCH
Q552 2SC1740S (RS) BUFFER
FL505 4.43MSGBPF
Q560 DTA144ES SWITCH
Q555~557, 569 2SC1740S (RS) X4
DL502 ADL-FE2544W PAL2H
Q555 AMP
Q554 1SS133
Q562 DTA144ES SWITCH
Q558 DTA144ES SWITCH
Q568 2SC1740S (RS) BUFFER
DL503 ADL-FN1334W NT3.581H
Q553 DTA144ES SWITCH
FL504 3.58MSGBPF
Q554 2SC1740S (RS) BUFFER
Q564, 565 2SC1740S (RS) X2
Q564 AMP
D553 1SS133
Q567 2SC1740S (RS) BUFFER
Q566 DTA144ES SWITCH
Q570 2SC1740S (RS) BUFFER
DL501 ADL-FN1344W NT4.431H
D555 1SS133
D471, 472 1SS133X2
INVERTER IC471 TC4049BP
CN407
AUDIO OUT
AUDIO GND
AUDIO IN
AUDIO GND
CONT 12
VIDEO OUT
VIDEO GND
VIDEO IN
VIDEO GND
TO H CONNECTOR C.B HL401
BT407
LP
EP
SP
TO B SERVO/SYS.CON C.B CN207
BT591
REG 9V
3FSC
REG GND
TO D DIGITAL C.B CN2
SFR402: Y-FM CARRIER ADJ.
SFR403: Y-FM DEVIATION ADJ.
SFR405: PB Y LEVEL ADJ.
SFR406: PAL.DOC LEVEL ADJ.
SFR407: NTSC DOC LEVEL ADJ.

VOLTAGE

NO MARK: PB-NTSC

( ): REC

VIDEO SIGNAL

◀◁ : PB VIDEO SIGNAL

◀ : PB Y SIGNAL

◁ : PB CHROMA SIGNAL

≪◀ : REC Y SIGNAL

≪◁ : REC CHROMA SIGNAL

≪◀◁ : REC VIDEO SIGNAL

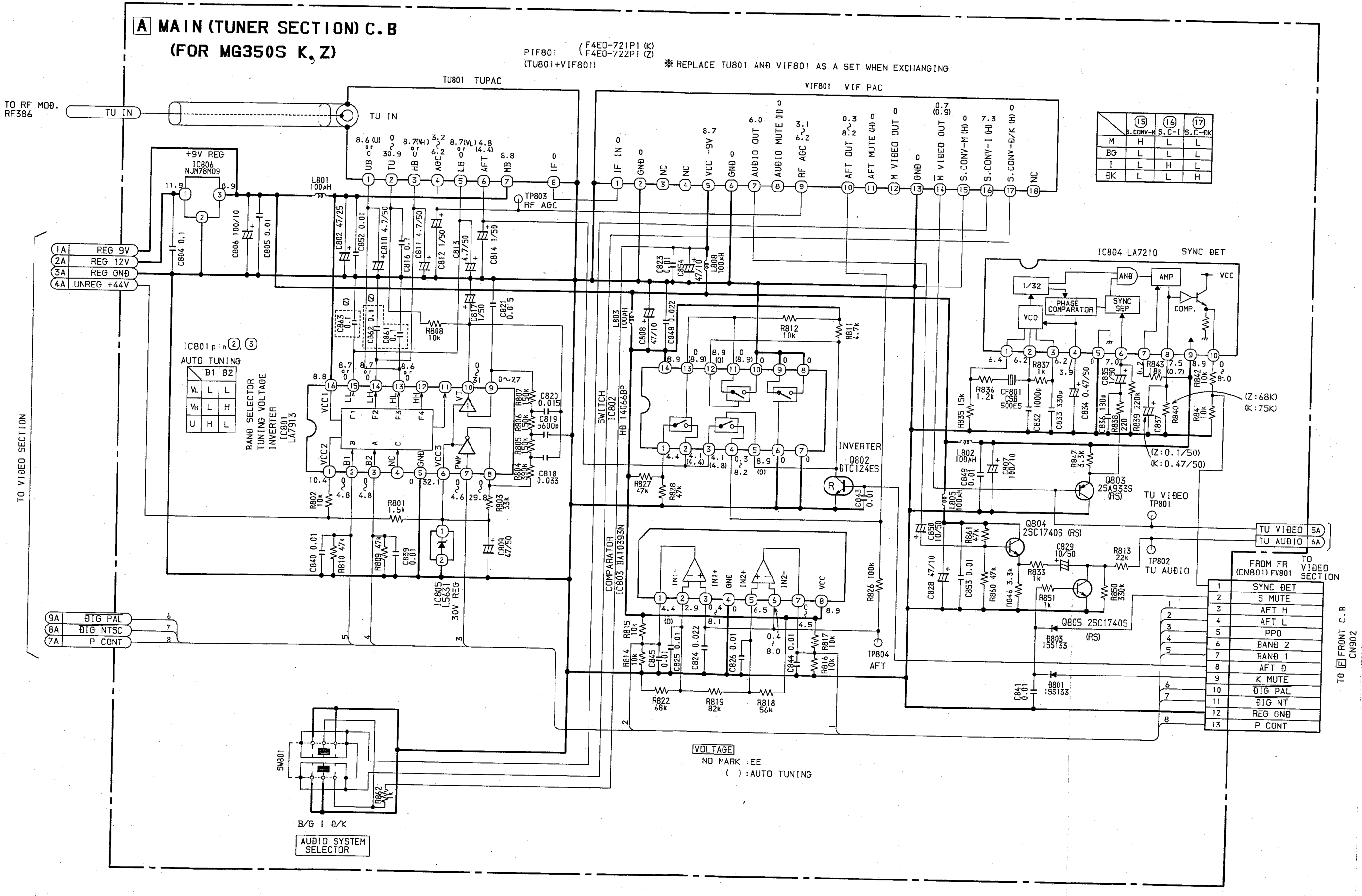
WAVE FORM

IC401 PIN NO.	②	③	⑥	⑦	⑨	㉑	㉔	㉚
PAL EE	⑧	⑦	⑥	④	—	③	②	⑨
PAL PB	—	—	—	㉒	㉓	㉔	—	—
NTSC EE	㊼	㊻	㊺	㊹	—	㊷	㊶	㊽
NTSC PB	—	—	—	(61)	(62)	(63)	—	—

WAVE FORM

IC501 PIN NO.	③	⑤	⑦	⑨	⑪	⑬	⑱	⑲	㉑	㉓	㉔
PAL EE	⑬	⑫	—	⑭	⑳	⑱	⑯	⑰	⑪	⑲	—
PAL PB	㉙	㉘	㉗	—	—	—	㉜	㉝	—	㉛	㉚
NTSC EE	(52)	(51)	—	(54)	(59)	(58)	(56)	(57)	㊿	(53)	—
NTSC PB	(68)	(67)	(66)	—	—	—	(70)	(72)	—	(71)	(69)

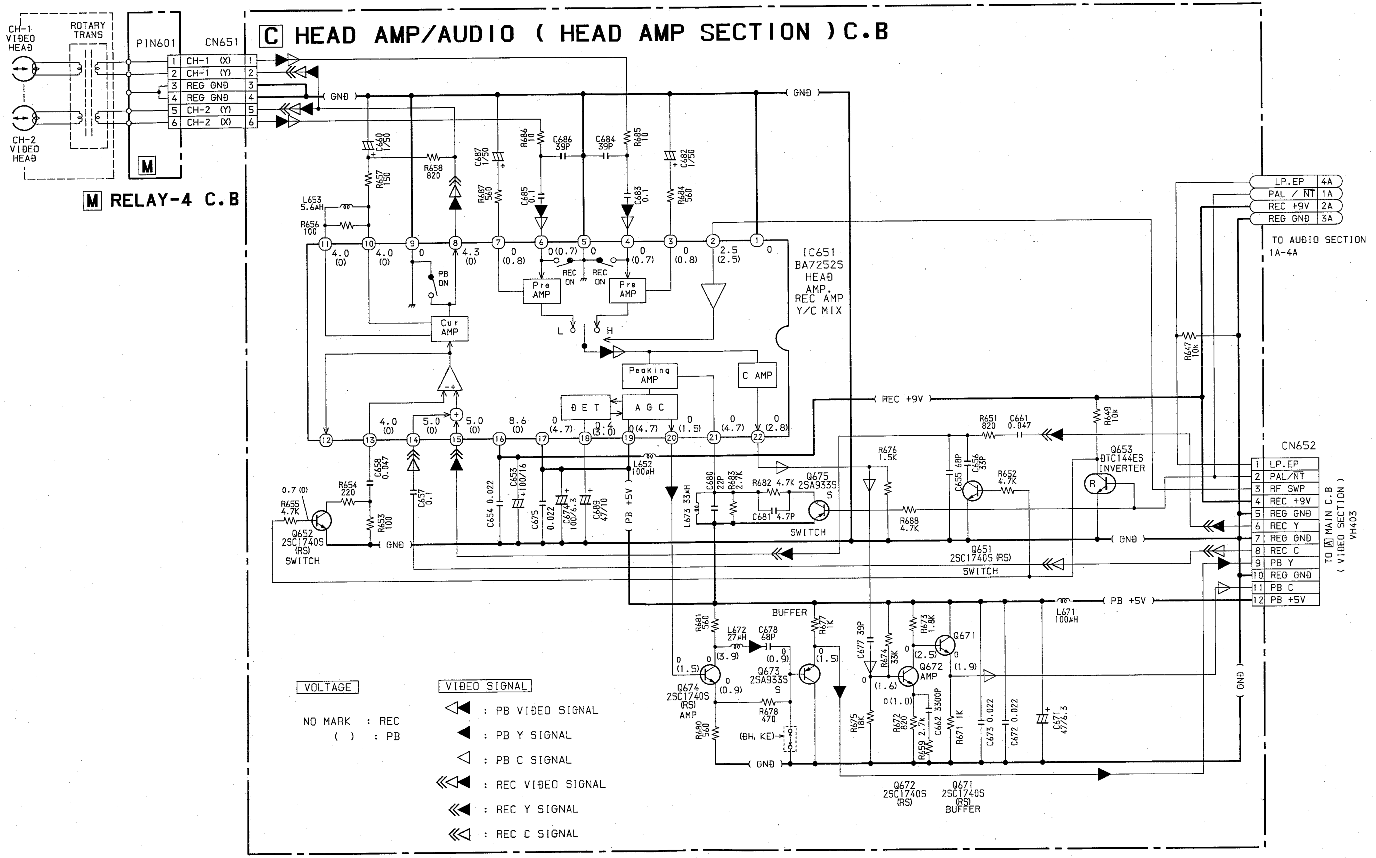
SCHEMATIC DIAGRAM – 6 (TUNER SECTION) MG350K, Z


A MAIN (TUNER SECTION) C.B
(FOR MG350S K, Z)
PIF801 (F4E0-721P1 (K) / F4E0-722P1 (Z))
(TU801+VIF801)
※ REPLACE TU801 AND VIF801 AS A SET WHEN EXCHANGING
TU801 TUPAC
VIF801 VIF PAC
TO RF MOD. RF386
TU IN
+9V REG
IC806 NJM78M09
L801 100μH
TP803 RF AGC
UB
TU
HB
AGC
LB
AFT
MB
IF
IF IN
GND
NC
VCC +9V
AUDIO OUT
AUDIO MUTE (H)
RF AGC
AFT OUT
AFT MUTE (H)
M VIDEO OUT
VIDEO OUT
S.CONV-M (H)
S.CONV-I (H)
S.CONV-D/K (H)
1A REG 9V
2A REG 12V
3A REG GND
4A UNREG +44V
IC801 pin ②, ③
AUTO TUNING
BAND SELECTOR
TUNING VOLTAGE
INVERTER
IC801 LA7913
IC805 L5631 30V REG
SWITCH IC802 HD 14066BP
COMPARATOR IC803 BA10393N
L803 100μH
L808 100μH
INVERTER Q802 DTC124ES
IC804 LA7210 SYNC DET
1/32
AND
AMP
VCC
PHASE COMPARATOR
SYNC SEP
VCO
COMP.
(Z:68K)
(K:75K)
(Z:0.1/50)
(K:0.47/50)
Q803 2SA933S (RS)
TU VIDEO TP801
Q804 2SC1740S (RS)
TP802 TU AUDIO
Q805 2SC1740S (RS)
D803 1SS133
D801 1SS133
TP804 AFT
TU VIDEO 5A
TU AUDIO 6A
FROM FR (CN801) FV801
TO VIDEO SECTION
1 SYNC DET
2 S MUTE
3 AFT H
4 AFT L
5 PPO
6 BAND 2
7 BAND 1
8 AFT D
9 K MUTE
10 DIG PAL
11 DIG NT
12 REG GND
13 P CONT
TO F FRONT C.B CN902
9A DIG PAL
8A DIG NTSC
7A P CONT
TO VIDEO SECTION
SW801
B/G I D/K
AUDIO SYSTEM SELECTOR
VOLTAGE
NO MARK :EE
( ) :AUTO TUNING

	⑮ S.CONV-M	⑯ S.C-I	⑰ S.C-DK
M	H	L	L
BG	L	L	L
I	L	H	L
DK	L	L	H

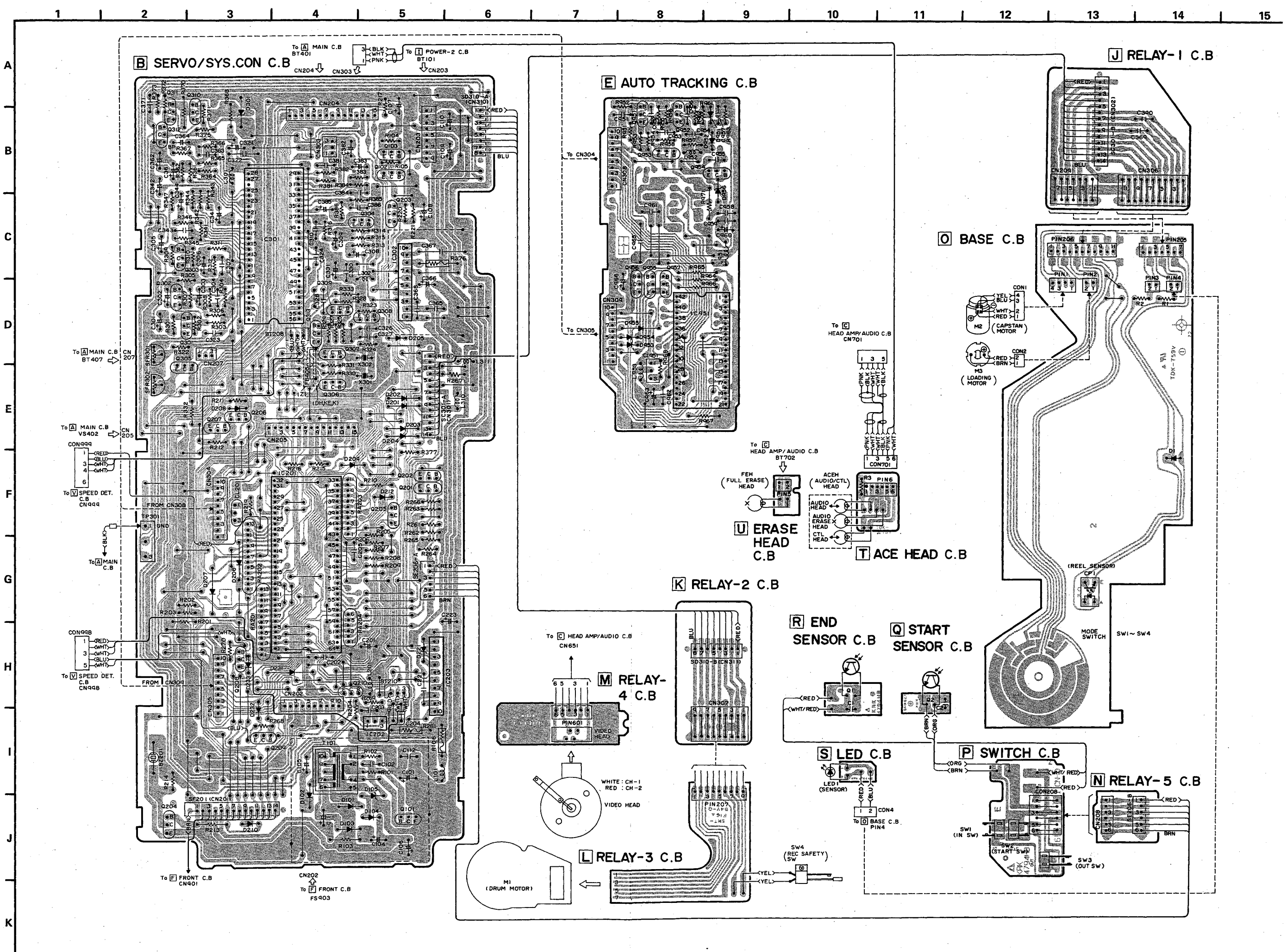
	B1	B2
VL	L	L
VH	L	H
U	H	L

SCHEMATIC DIAGRAM – 7 (HEAD AMP SECTION)

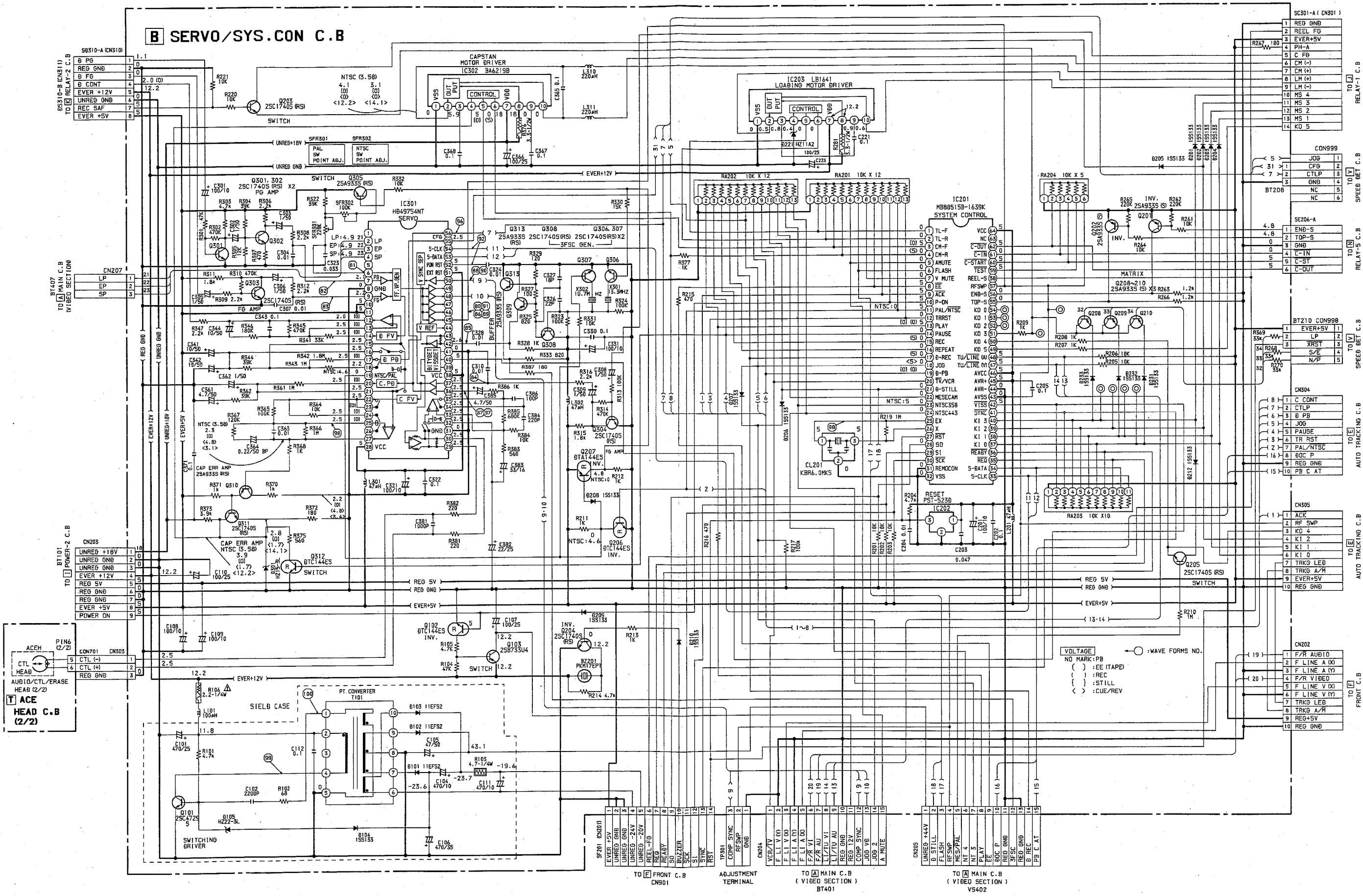


C HEAD AMP/AUDIO (HEAD AMP SECTION) C.B
M RELAY-4 C.B
CH-1 VIDEO HEAD
CH-2 VIDEO HEAD
ROTARY TRANS
PIN601
CN651
1 CH-1 (X)
2 CH-1 (Y)
3 REG GND
4 REG GND
5 CH-2 (Y)
6 CH-2 (X)
GND
IC651 BA7252S HEAD AMP, REC AMP Y/C MIX
Pre AMP
Cur AMP
Peaking AMP
C AMP
DET
AGC
PB ON
REC ON
L
H
REC +9V
PB +5V
L653 5.6μH
R656 100
C660 1/50
R657 150
R658 820
C687 1/50
R687 560
R686 10
C686 39P
C684 39P
R685 10
C685 0.1
C683 0.1
C682 1/50
R684 560
R655 4.7K
R654 220
C658 0.047
R653 100
C657 0.1
C654 0.022
C653 100/16
C675 0.022
C674 100/6.3
C689 47/10
L652 100μH
L673 33μH
C680 22P
R683 2.7K
R682 4.7K
C681 4.7P
Q675 2SA933S
SWITCH
R676 1.5K
R688 4.7K
C655 68P
C656 33P
R652 4.7K
R651 820
C661 0.047
R649 10k
R647 10k
Q653 DTC144ES INVERTER
Q651 2SC1740S (RS) SWITCH
Q652 2SC1740S (RS) SWITCH
BUFFER
R681 560
L672 27μH
C678 68P
R677 1K
Q673 2SA933S
Q674 2SC1740S (RS) AMP
R678 470
R680 560
(DH, KE)
C677 39P
R674 33K
R673 1.8K
Q671
Q672 AMP
R675 18K
R672 820
R659 2.7K
C662 3300P
R671 1K
C673 0.022
C672 0.022
C671 47/6.3
L671 100μH
Q672 2SC1740S (RS)
Q671 2SC1740S (RS) BUFFER
LP.EP 4A
PAL / NT 1A
REC +9V 2A
REG GND 3A
TO AUDIO SECTION 1A-4A
CN652
1 LP.EP
2 PAL/NT
3 RF SWP
4 REC +9V
5 REG GND
6 REC Y
7 REG GND
8 REC C
9 PB Y
10 REG GND
11 PB C
12 PB +5V
TO A MAIN C.B (VIDEO SECTION) VH403
VOLTAGE
NO MARK : REC
( ) : PB
VIDEO SIGNAL
: PB VIDEO SIGNAL
: PB Y SIGNAL
: PB C SIGNAL
: REC VIDEO SIGNAL
: REC Y SIGNAL
: REC C SIGNAL

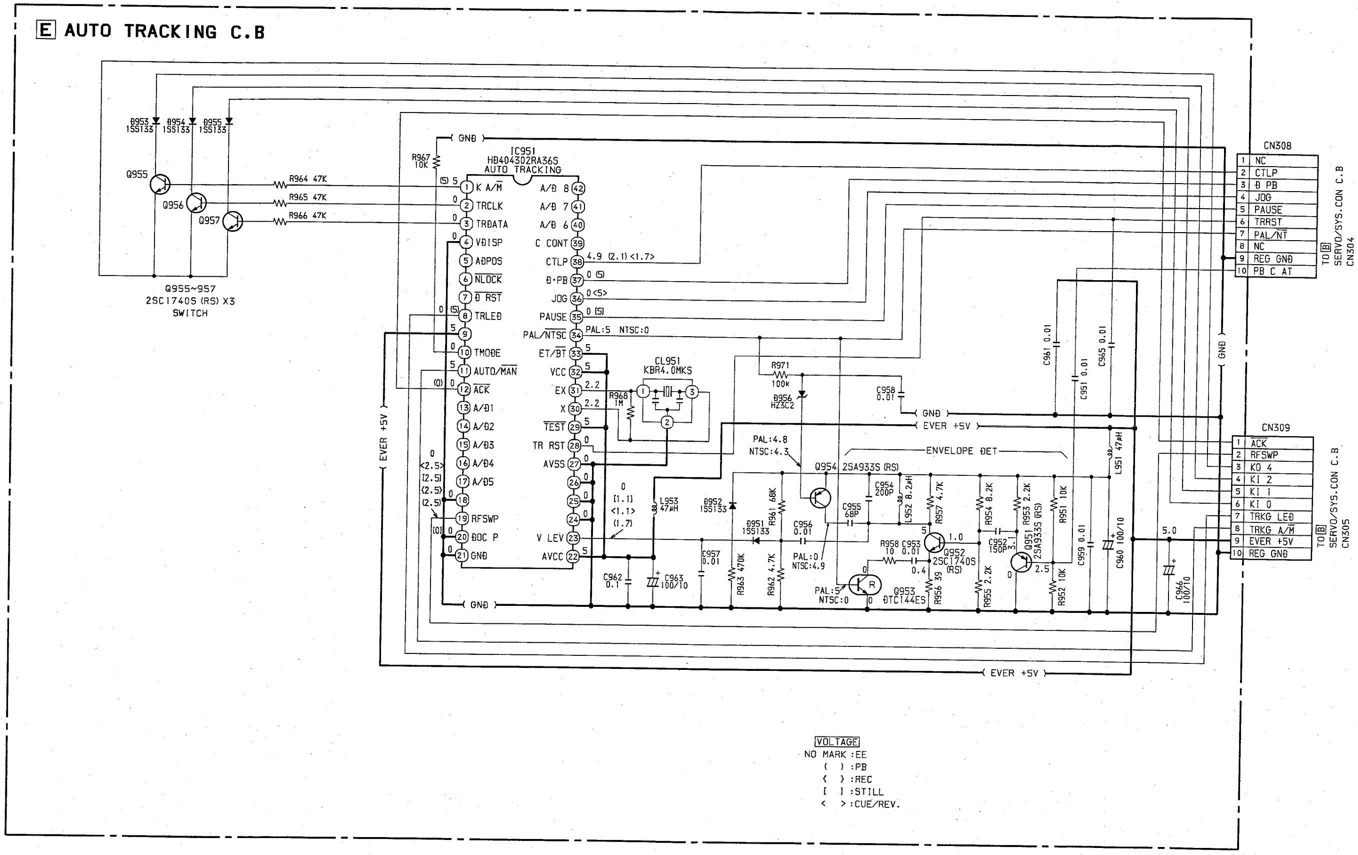
WIRING – 3 (SERVO/SYSTEM CONTROL/AUTO TRACKING/MECHANISM SECTION)


B SERVO/SYS.CON C.B
E AUTO TRACKING C.B
J RELAY-1 C.B
O BASE C.B
U ERASE HEAD C.B
T ACE HEAD C.B
K RELAY-2 C.B
M RELAY-4 C.B
R END SENSOR C.B
Q START SENSOR C.B
S LED C.B
P SWITCH C.B
N RELAY-5 C.B
L RELAY-3 C.B
M1 (DRUM MOTOR)
M2 (CAPSTAN MOTOR)
M3 (LOADING MOTOR)
VIDEO HEAD
WHITE : CH-1
RED : CH-2
MODE SWITCH
SW1 ~ SW4
(REEL SENSOR)
SW1 (IN SW)
SW2 (START SW)
SW3 (OUT SW)
SW4 (REC SAFETY) SW
LED1 (SENSOR)
FEH (FULL ERASE) HEAD
ACEH (AUDIO/CTL) HEAD
AUDIO HEAD
AUDIO ERASE HEAD
CTL HEAD
To A MAIN C.B BT401
To I POWER-2 C.B BT101
To A MAIN C.B BT407
To A MAIN C.B VS402
To V SPEED DET. C.B CN999
To V SPEED DET. C.B CN998
To A MAIN C.B
To F FRONT C.B CN901
To F FRONT C.B FS903
To C HEAD AMP/AUDIO C.B CN701
To C HEAD AMP/AUDIO C.B BT702
To C HEAD AMP/AUDIO C.B CN651
To O BASE C.B PIN4
To CN304
To CN305
FROM CN308
FROM CN309
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K

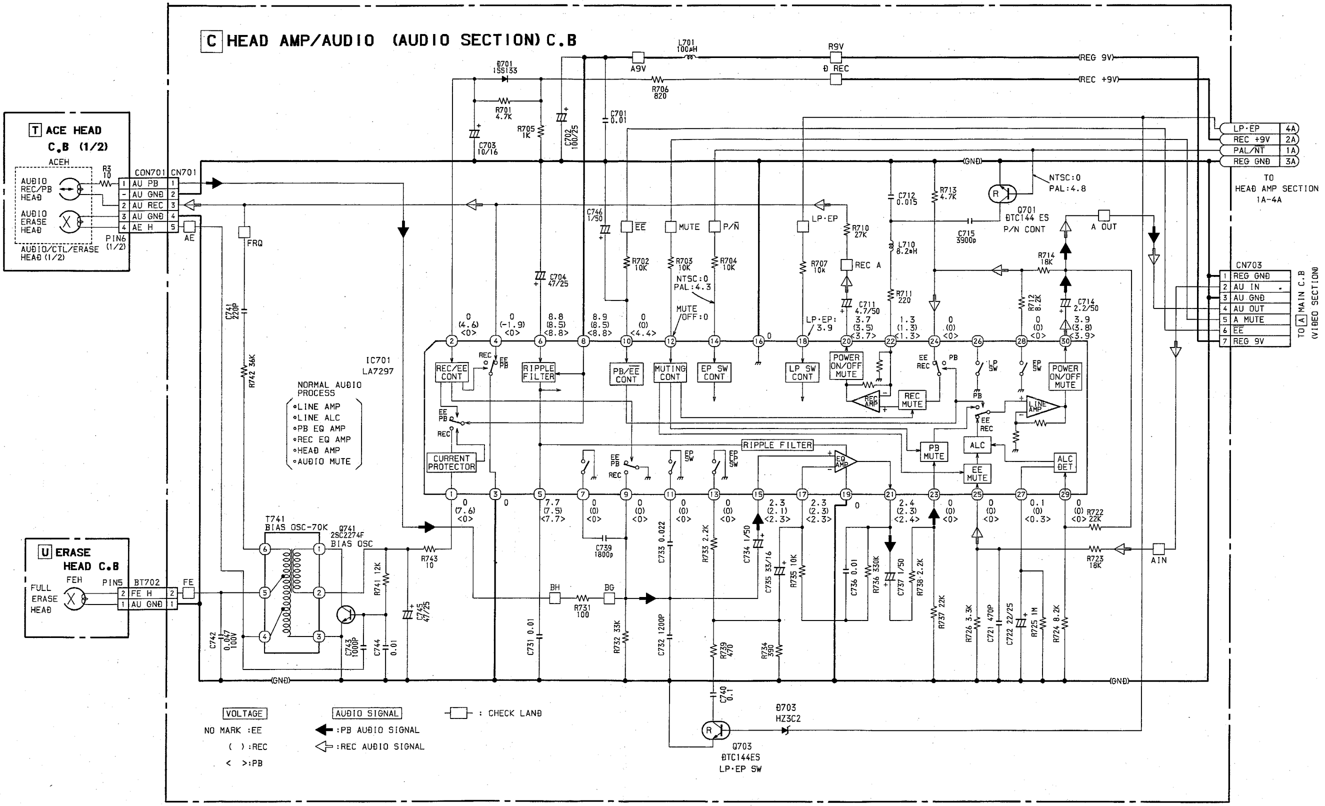
SCHEMATIC DIAGRAM – 8 (SERVO/SYSTEM/CONTROL SECTION)


B SERVO/SYS.CON C.B
CAPSTAN MOTOR DRIVER IC302 BA6219B
IC203 LB1641 LOADING MOTOR DRIVER
IC301 HA49754NT SERVO
IC201 MB88515B-1639K SYSTEM CONTROL
Q203 2SC1740S (RS) SWITCH
Q301, 302 2SC1740S (RS) X2 PG AMP
Q305 2SA933S (RS) SWITCH
Q313 2SA933S (RS)
Q308 2SC1740S (RS)
Q306, 307 2SC1740S (RS) X2 3FSC GEN.
Q303 2SC1740S (RS) FG AMP
Q310 2SA933S (RS) CAP ERR AMP
Q311 2SC1740S (RS) CAP ERR AMP
Q312 DTC144ES SWITCH
Q304 2SC1740S (RS)
Q207 DTA144ES INV.
Q206 DTC144ES INV.
Q201 2SA933S (S) INV.
Q202 2SA933S (S) INV.
Q208~210 2SA933S (S) X3 MATRIX
Q205 2SC1740S (RS) SWITCH
Q102 DTC144ES INV.
Q103 2SB733U4 SWITCH
Q204 2SC1740S (RS) INV.
BZ201 PKM17EPT
Q101 2SC4729 SWITCHING DRIVER
PT. CONVERTER T101
SIELD CASE
RA202 10K X 12
RA201 10K X 12
RA204 10K X 5
RA203 10K X10
CL201 KBR6.0MKS
RESET PST-523D IC202
SFR301 PAL SW POINT ADJ.
SFR302 NTSC SW POINT ADJ.
SB310-A (CN310) TO K RELAY-2 C.B BS310-B (CN311)
CN207 TO A MAIN C.B (VIDEO SECTION) BT407
CN203 TO I POWER-2 C.B BT101
CON701 CN303 PIN6 (2/2) ACEH CTL HEAD AUDIO/CTL/ERASE HEAD (2/2)
T ACE HEAD C.B (2/2)
SC301-A (CN301) TO J RELAY-1 C.B SC301-B (CN302)
CON999 TO V SPEED DET C.B CN999
SE206-A TO N RELAY-5 C.B SE206-B
BT210 CON998 TO V SPEED DET C.B CN998
CN304 TO E AUTO TRACKING C.B CN308
CN305 TO E AUTO TRACKING C.B CN309
CN202 TO F FRONT C.B F5903
SF201 (CN201) TO F FRONT C.B CN901
TP301 ADJUSTMENT TERMINAL
CN204 TO A MAIN C.B (VIDEO SECTION) BT401
CN205 TO A MAIN C.B (VIDEO SECTION) VS402
VOLTAGE NO MARK: PB ( ) : EE (TAPE) [ ] : REC ( ) : STILL < > : CUE/REV
○ : WAVE FORMS NO.

SCHEMATIC DIAGRAM – 9 (AUTO TRACKING SECTION)

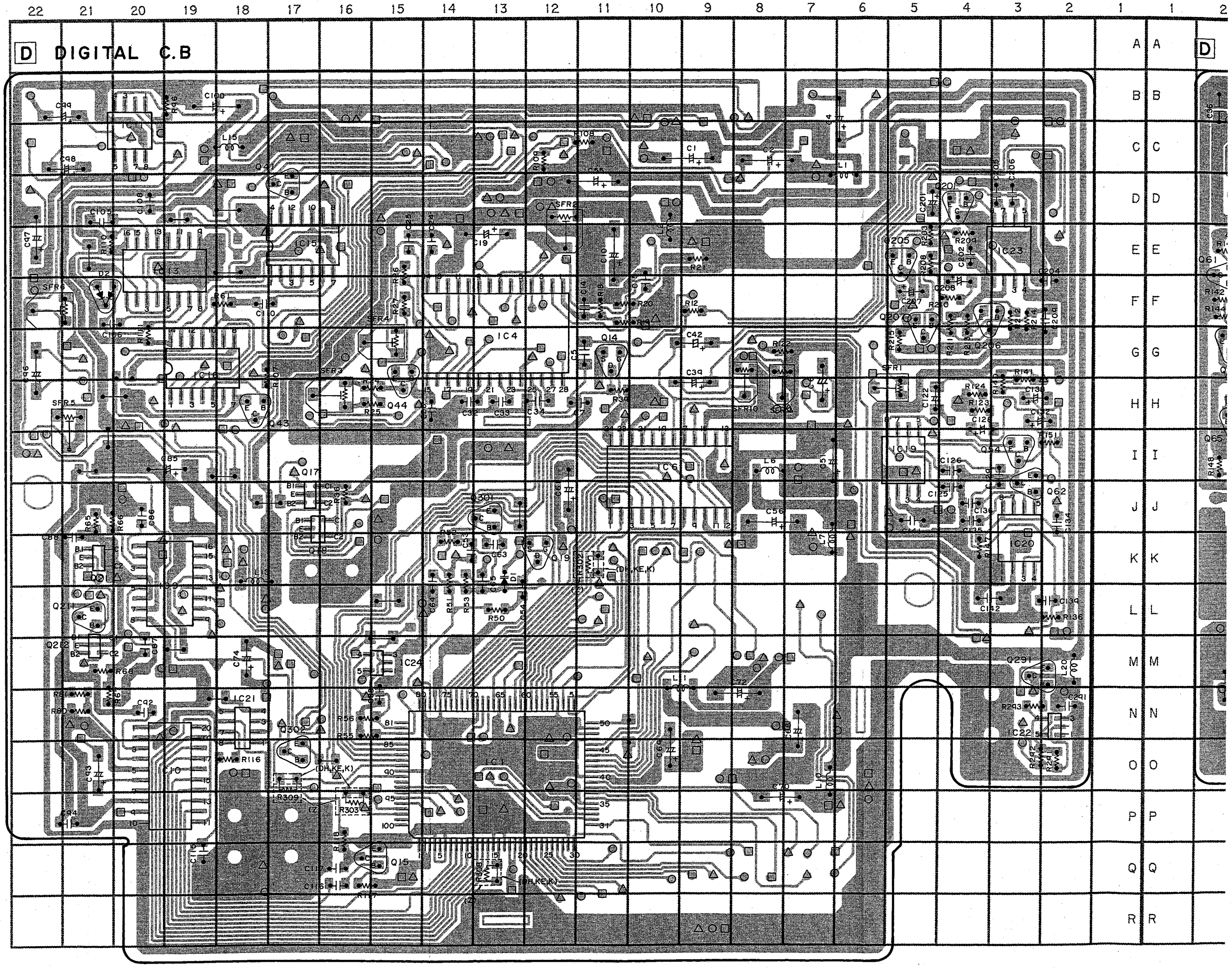

E AUTO TRACKING C.B
D953 1SS133
D954 1SS133
D955 1SS133
Q955
Q956
Q957
Q955~957
2SC1740S (RS) X3
SWITCH
R964 47K
R965 47K
R966 47K
R967 10K
GND
IC951
HD404302RA36S
AUTO TRACKING
1 K A/M
2 TRCLK
3 TRDATA
4 VDISP
5 ADPOS
6 NLOCK
7 D RST
8 TRLED
9
10 TMODE
11 AUTO/MAN
12 ACK
13 A/D1
14 A/D2
15 A/D3
16 A/D4
17 A/D5
18
19 RFSWP
20 DOC P
21 GND
42 A/D 8
41 A/D 7
40 A/D 6
39 C CONT
38 CTLP
37 D·PB
36 JOG
35 PAUSE
34 PAL/NTSC
33 ET/BT
32 VCC
31 EX
30 X
29 TEST
28 TR RST
27 AVSS
26
25
24
23 V LEV
22 AVCC
4.9 (2.1) <1.7>
PAL:5 NTSC:0
CL951
KBR4.0MKS
R968 1M
R971 100k
D956 HZ3C2
C958 0.01
GND
EVER +5V
PAL:4.8
NTSC:4.3
ENVELOPE DET
Q954 2SA933S (RS)
C954 200P
L952 8.2µH
R957 4.7K
R954 8.2K
R953 2.2K
R951 10K
C955 68P
L953 47µH
D952 1SS133
D951 1SS133
R961 68K
C956 0.01
R958 10
C953 0.01
Q952 2SC1740S (RS)
C952 150P
Q951 2SA933S (RS)
C957 0.01
R963 470K
R962 4.7K
PAL:0
NTSC:4.9
PAL:5
NTSC:0
Q953 DTC144ES
R956 39
R955 2.2K
R952 10K
C959 0.01
C960 100/10
C962 0.1
C963 100/10
C961 0.01
C951 0.01
C965 0.01
L951 47µH
C966 100/10
5.0
CN308
1 NC
2 CTLP
3 D PB
4 JOG
5 PAUSE
6 TRRST
7 PAL/NT
8 NC
9 REG GND
10 PB C AT
TO B SERVO/SYS.CON C.B CN304
CN309
1 ACK
2 RFSWP
3 KO 4
4 KI 2
5 KI 1
6 KI 0
7 TRKG LED
8 TRKG A/M
9 EVER +5V
10 REG GND
TO B SERVO/SYS.CON C.B CN305
EVER +5V
VOLTAGE
NO MARK :EE
( ) :PB
< > :REC
[ ] :STILL
< > :CUE/REV.

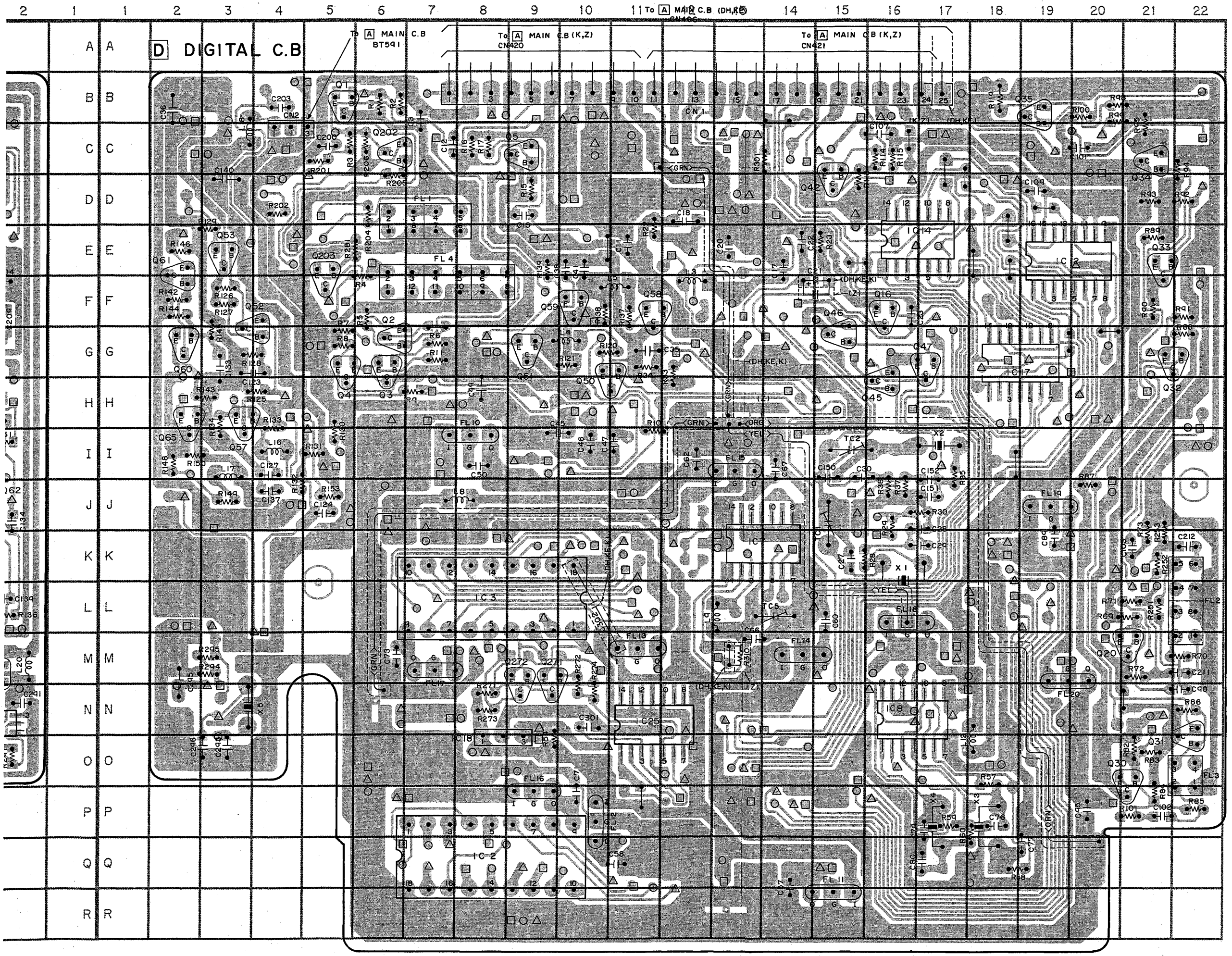
SCHEMATIC DIAGRAM – 10 (AUDIO SECTION)



C HEAD AMP/AUDIO (AUDIO SECTION) C.B
T ACE HEAD C.B (1/2)
ACEH
AUDIO REC/PB HEAD
AUDIO ERASE HEAD
AUDIO/CTL/ERASE HEAD (1/2)
PIN6 (1/2)
R3 10
CON701
CN701
AU PB
AU GND
AU REC
AU GND
AE H
AE
FRQ
U ERASE HEAD C.B
FEH
FULL ERASE HEAD
PIN5
BT702
FE H
AU GND
FE
T741 BIAS OSC-70K
Q741 2SC2274F BIAS OSC
IC701 LA7297
NORMAL AUDIO PROCESS
•LINE AMP
•LINE ALC
•PB EQ AMP
•REC EQ AMP
•HEAD AMP
•AUDIO MUTE
D701 1SS133
L701 100μH
A9V
R9V
D REC
R706 820
REG 9V
REC +9V
LP·EP
PAL/NT
REG GND
TO HEAD AMP SECTION 1A-4A
CN703
AU IN
AU OUT
A MUTE
EE
TO A MAIN C.B (VIDEO SECTION) VH404
NTSC:0
PAL:4.8
Q701 DTC144 ES P/N CONT
A OUT
AIN
REC/EE CONT
RIPPLE FILTER
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
POWER ON/OFF MUTE
REC AMP
REC MUTE
LINE AMP
PB MUTE
ALC
EE MUTE
ALC DET
EQ AMP
CURRENT PROTECTOR
MUTE
P/N
REC A
NTSC:0
PAL:4.3
MUTE/OFF:0
LP·EP: 3.9
BH
BG
R731 100
D703 HZ3C2
Q703 DTC144ES LP·EP SW
(GND)
VOLTAGE
NO MARK :EE
( ) :REC
< >:PB
AUDIO SIGNAL
:PB AUDIO SIGNAL
:REC AUDIO SIGNAL
: CHECK LAND

WIRING – 4 (DIGITAL SECTION)


D
DIGITAL C.B
22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
1 2
A B C D E F G H I J K L M N O P Q R
IC1
IC4
IC6
IC10
IC11
IC13
IC15
IC16
IC19
IC20
IC21
IC22
IC23
Q14
Q15
Q17
Q19
Q20
Q34
Q43
Q44
Q62
Q205
Q206
Q291
Q301
Q302
SFR1
SFR2
SFR3
SFR4
SFR5
SFR6
(DH,KE,K)
R303
R309
L1
L6
L7
L15
L20


D DIGITAL C.B
To A MAIN C.B
BT591
To A MAIN C.B (K,Z)
CN420
To A MAIN C.B (DH,KE)
CN405
To A MAIN C.B (K,Z)
CN421
CN1
CN2
(K,Z)
(DH,KE)
IC2
IC3
IC7
IC8
IC12
IC14
IC15
IC17
IC18
IC25
FL1
FL2
FL3
FL4
FL10
FL11
FL12
FL13
FL14
FL15
FL16
FL17
FL18
FL19
FL20
X1
X2
X3
X4
X5
Q1
Q2
Q3
Q4
Q5
Q16
Q20
Q30
Q31
Q32
Q33
Q34
Q35
Q42
Q45
Q46
Q47
Q50
Q51
Q52
Q53
Q57
Q58
Q59
Q60
Q61
Q65
Q202
Q203
Q271
Q272
(GRN)
(ORG)
(YEL)
(ORN)
(DH,KE,K)
(Z)
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
1
2
3
4
5
6
7
8
9
10
11
12
13
14
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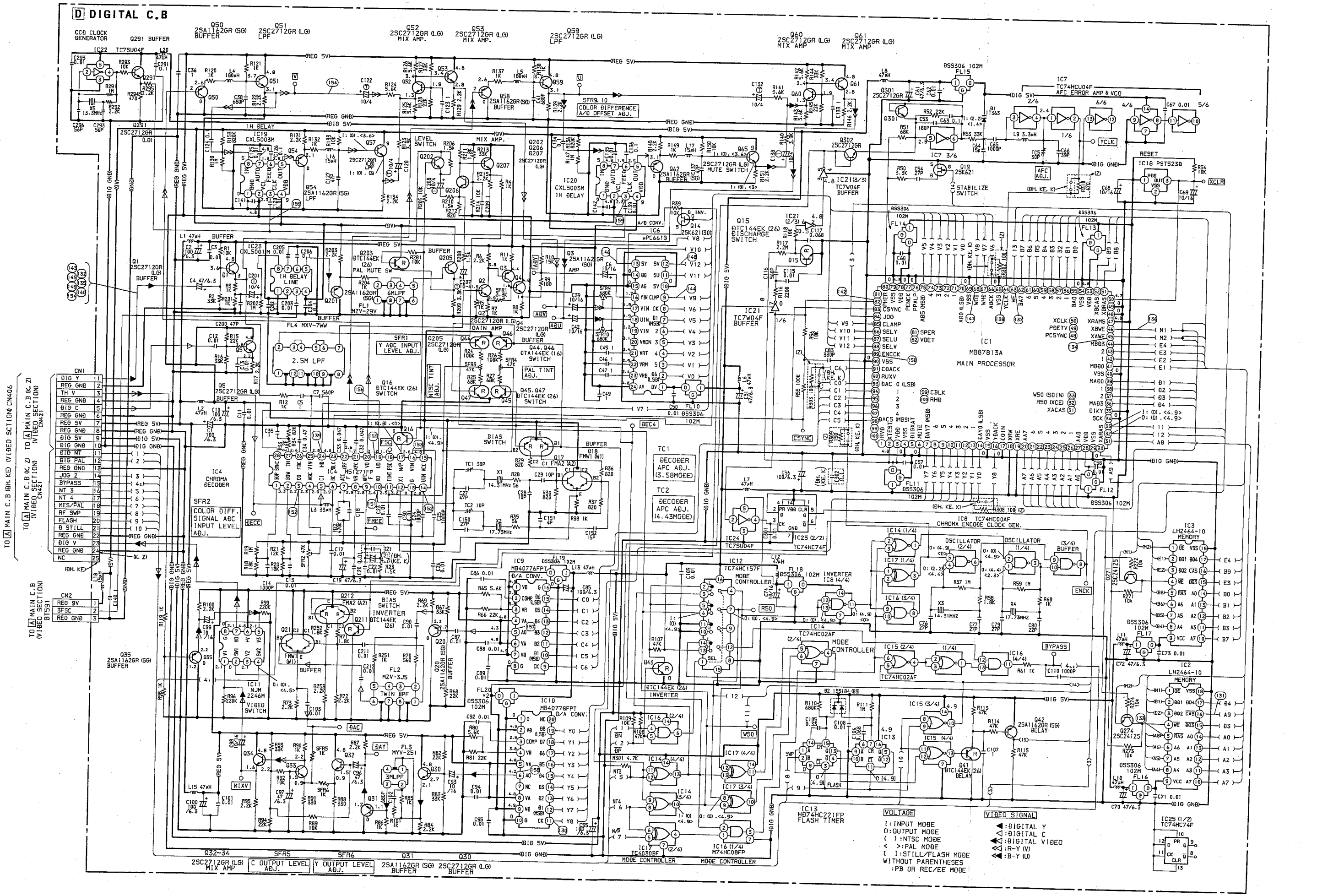
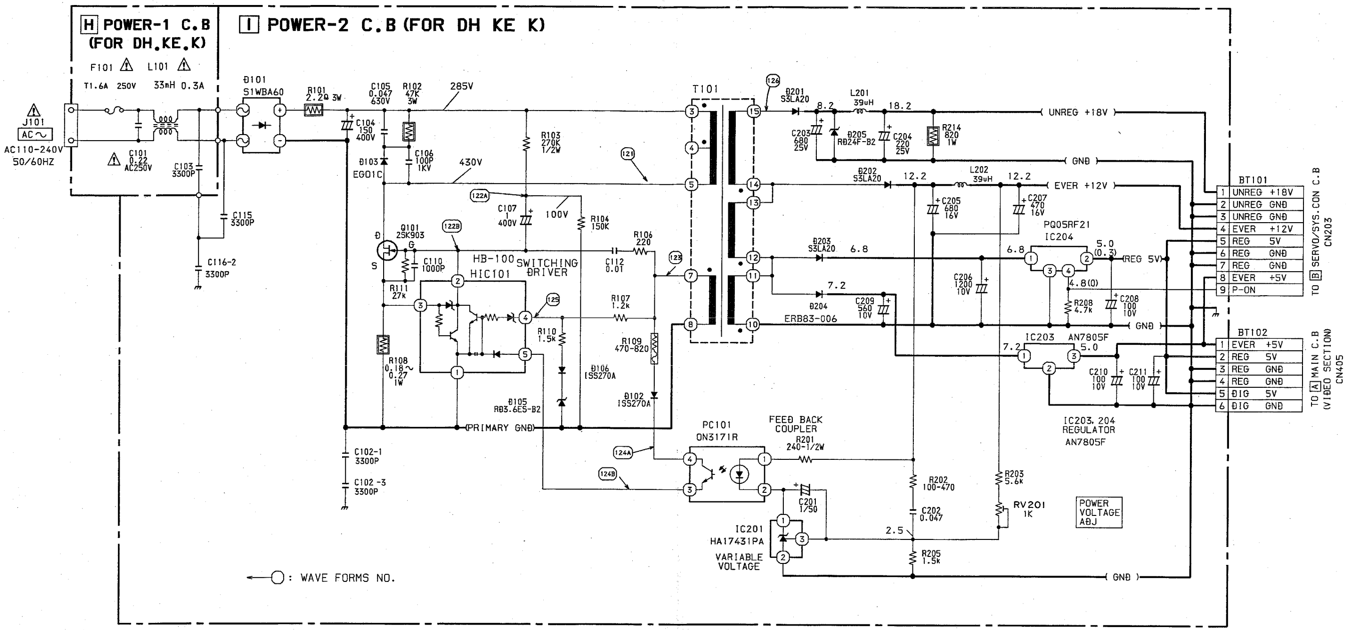
16
17
18
19
20
21
22

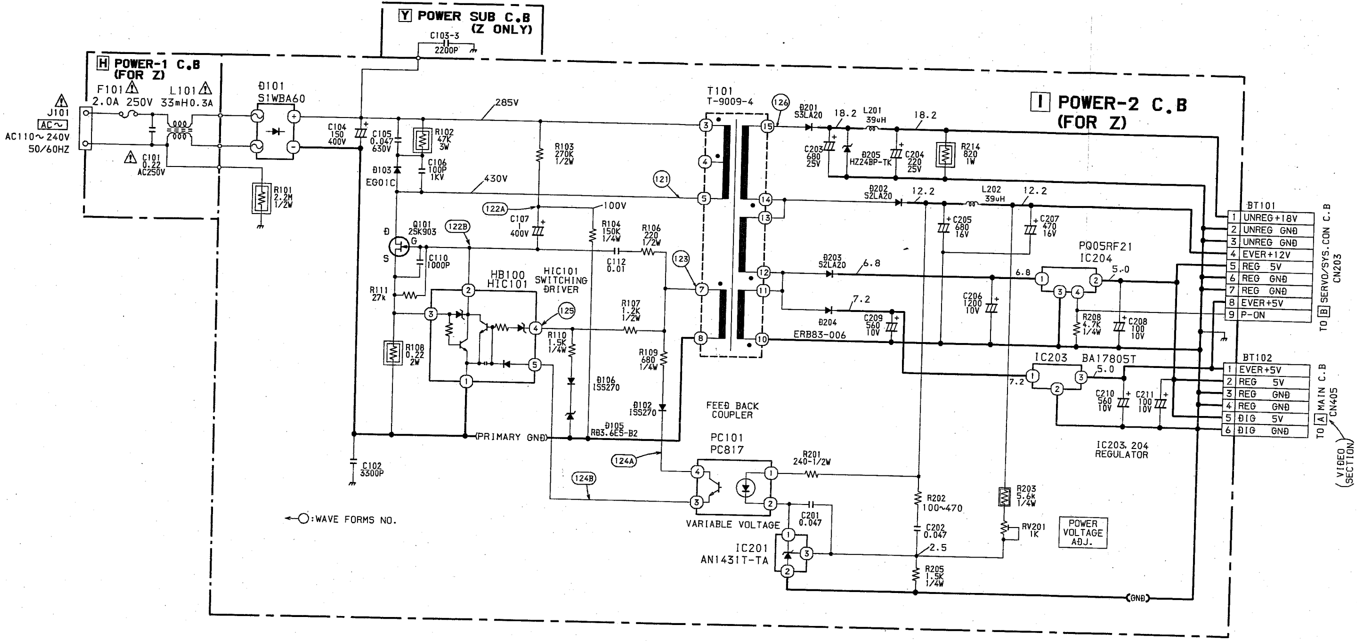
SCHEMATIC DIAGRAM – 11


D DIGITAL C.B
CCD CLOCK GENERATOR
Q291 BUFFER
IC22 TC7SU04F
Q50 2SA1162GR (SG) BUFFER
Q51 2SC2712GR (LG) LPF
Q52 2SC2712GR (LG) MIX AMP.
Q53 2SC2712GR (LG) MIX AMP.
Q59 2SC2712GR (LG) LPF
Q60 2SC2712GR (LG) MIX AMP
Q61 2SC2712GR (LG) MIX AMP
Q58 2SA1162GR (SG) BUFFER
SFR9 10 COLOR DIFFERENCE A/B OFFSET ADJ.
1H DELAY
IC19 CXL5003M
IC20 CXL5003M 1H DELAY
Q54 2SA1162GR (SG) LPF
LEVEL SWITCH
MIX AMP.
Q202 Q206 Q207 2SC2712GR
Q62 2SA1162GR (SG) BUFFER
Q65 2SC2712GR (LG) MUTE SWITCH
Q302 2SC2712GR
IC21 (3/3) TC7W04F BUFFER
Q301 2SC2712GR
IC7 TC74HCU04F AFC ERROR AMP & VCO
Q19 2SK621 STABILIZE SWITCH
AFC ADJ.
YCLK
RESET
IC18 PST523D
XCLR
IC23 CXL5001M 1H DELAY LINE
Q1 2SC2712GR (LG) BUFFER
Q203 DTC144EK (26) PAL MUTE SW
Q201 2SA1162GR (SG) 6MLPF
FL1 MZV-29V
BUFFER Q205
Q2 2SC2712GR (LG)
Q3 2SA1162GR (SG) AMP
IC6 μPC661G
Q14 2SK621 INV.
Q15 DTC144EK (26) DISCHARGE SWITCH
IC21 (2/3)
IC21 TC7W04F BUFFER
FL4 MXV-7WW
2.5M LPF
SFR1 Y ADC INPUT LEVEL ADJ.
Q4 2SC2712GR (LG) GAIN AMP
Q44,Q46 DTA144EK (16) SWITCH
PAL TINT ADJ.
NTSC TINT ADJ.
Q45,Q47 DTC144EK (26) SWITCH
Q5 2SC2712GR (LG) BUFFER
Q16 DTC144EK (26) SWITCH
IC1 MB87813A MAIN PROCESSOR
IC4 CHROMA DECODER M51271FP
SFR2 COLOR DIFF. SIGNAL ADC INPUT LEVEL ADJ.
BIAS SWITCH
Q17 FMA2 (A2)
Q18 FMW1 (W1) BUFFER
TC1 DECODER APC ADJ. (3.58MODE)
TC2 DECODER APC ADJ. (4.43MODE)
IC24 TC7SU04F
IC25 (2/2) TC74HC74F
IC8 TC74HC00AF CHROMA ENCODE CLOCK GEN.
IC14 (1/4) OSCILLATOR (2/4) OSCILLATOR (1/4) (3/4) BUFFER
IC3 LH2464-10 MEMORY
IC9 MB40776FPT D/A CONV.
IC12 TC74HC157F MODE CONTROLLER
FL18 DSS306 102M INVERTER IC8 (4/4)
IC14 TC74HC02AF (2/4) MODE CONTROLLER
IC15 (2/4) TC74HC02AF
IC16 (4/4)
BYPASS
ENCK
Q212 FMA2 (A2)
Q211 DTC144EK (26)
BIAS SWITCH INVERTER
Q210 FMW1 (W1) BUFFER
IC11 NJM 2246M VIDEO SWITCH
FL2 MZV-3J5 TWIN BPF
Q20 2SA1162GR (SG) BUFFER
Q35 2SA1162GR (SG) BUFFER
Q43 DTC144EK (26) INVERTER
IC10 MB40778FPT D/A CONV.
IC13 HD74HC221FP FLASH TIMER
Q42 2SA1162GR (SG) DELAY
Q41 DTC144EK (26) DELAY
IC2 LH2464-10 MEMORY
Q274 2SC2412S
FL3 MYV-251
3MLPF
MIXV
DAC
DAY
IC17 TC4030BF MODE CONTROLLER
IC16 (1/4) M74HC08FP MODE CONTROLLER
IC25 (1/2) TC74HC74F
Q32~34 2SC2712GR (LG) MIX AMP
SFR5 C OUTPUT LEVEL ADJ.
SFR6 Y OUTPUT LEVEL ADJ.
Q31 2SA1162GR (SG) BUFFER
Q30 2SC2712GR (LG) BUFFER
CN1
DIG Y
REG GND
TH V
REG GND
DIG C
REG GND
REG 5V
REG GND
DIG 5V
DIG GND
DIG NT
DIG PAL
REG GND
JOG 2
BYPASS
NT 3
NT 4
MES/PAL
RF SWP
FLASH
D STILL
REG GND
DIG V
REG GND
NC
TO A MAIN C.B (DH, KE) (VIDEO SECTION) CN406
TO A MAIN C.B (K, Z) (VIDEO SECTION) CN421
CN2
REG 9V
3FSC
REG GND
TO A MAIN C.B (VIDEO SECTION) BT591
VOLTAGE
[ ]:INPUT MODE
O:OUTPUT MODE
( ):NTSC MODE
< >:PAL MODE
( ):STILL/FLASH MODE
WITHOUT PARENTHESES :PB OR REC/EE MODE
VIDEO SIGNAL
:DIGITAL Y
:DIGITAL C
:DIGITAL VIDEO
:R-Y (V)
:B-Y (U)

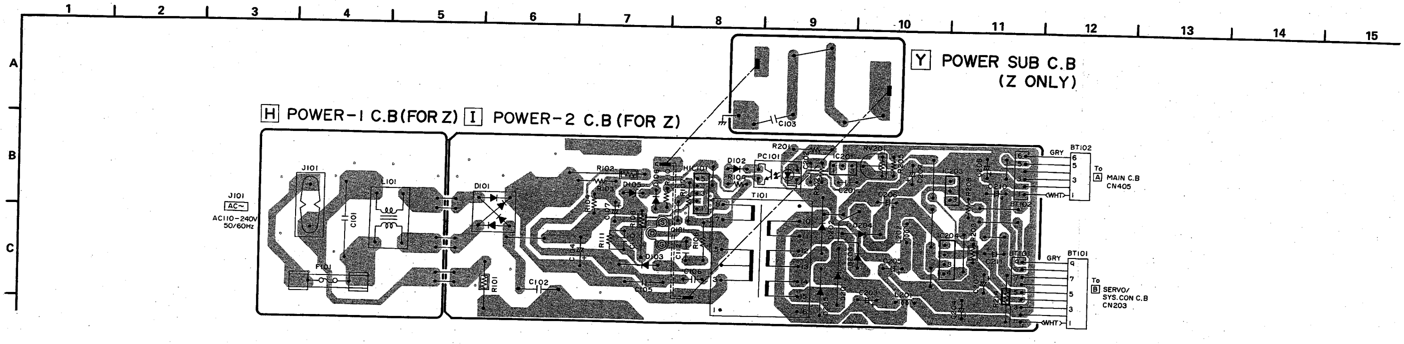
SCHEMATIC DIAGRAM – 12 (POWER UNIT SECTION) MG330KE, DH, MG350K


H POWER-1 C.B (FOR DH.KE.K)
F101 ⚠ L101 ⚠
T1.6A 250V 33mH 0.3A
I POWER-2 C.B (FOR DH KE K)
J101 AC~ AC110-240V 50/60HZ
C101 0.22 AC250V
C103 3300P
C115 3300P
C116-2 3300P
D101 S1WBA60
R101 2.2Ω 3W
C105 0.047 630V
R102 47K 3W
285V
C104 150 400V
C106 100P 1KV
D103 EG01C
430V
R103 270K 1/2W
C107 1 400V
100V
R104 150K
Q101 2SK903
D G S
C110 1000P
R111 27k
HB-100 SWITCHING DRIVER
HIC101
R106 220
C112 0.01
R107 1.2k
R110 1.5k
R109 470-820
R108 0.18~0.27 1W
D105 RD3.6ES-B2
D106 1SS270A
D102 1SS270A
PRIMARY GND
C102-1 3300P
C102-3 3300P
T101
D201 S3LA20
L201 39uH
8.2
18.2
C203 680 25V
D205 RD24F-B2
C204 220 25V
R214 820 1W
UNREG +18V
GND
D202 S3LA20
12.2
L202 39uH
12.2
EVER +12V
C205 680 16V
C207 470 16V
PQ05RF21 IC204
D203 S3LA20 6.8
6.8
5.0 (0.3)
REG 5V
4.8(0)
R208 4.7k
C208 100 10V
C206 1200 10V
7.2
D204 ERB83-006
C209 560 10V
GND
IC203 AN7805F
7.2 5.0
C210 100 10V
C211 100 10V
IC203, 204 REGULATOR AN7805F
PC101 ON3171R
FEED BACK COUPLER
R201 240-1/2W
C201 1/50
R202 100-470
C202 0.047
R203 5.6k
RV201 1K
POWER VOLTAGE ADJ
IC201 HA17431PA VARIABLE VOLTAGE
2.5
R205 1.5k
GND
BT101
1 UNREG +18V
2 UNREG GND
3 UNREG GND
4 EVER +12V
5 REG 5V
6 REG GND
7 REG GND
8 EVER +5V
9 P-ON
TO B SERVO/SYS.CON C.B CN203
BT102
1 EVER +5V
2 REG 5V
3 REG GND
4 REG GND
5 DIG 5V
6 DIG GND
TO A MAIN C.B (VIDEO SECTION) CN405
121 122A 122B 123 124A 124B 125 126
—○ : WAVE FORMS NO.

SCHEMATIC DIAGRAM – 13/WIRING – 5 (POWER UNIT SECTION) MG350Z

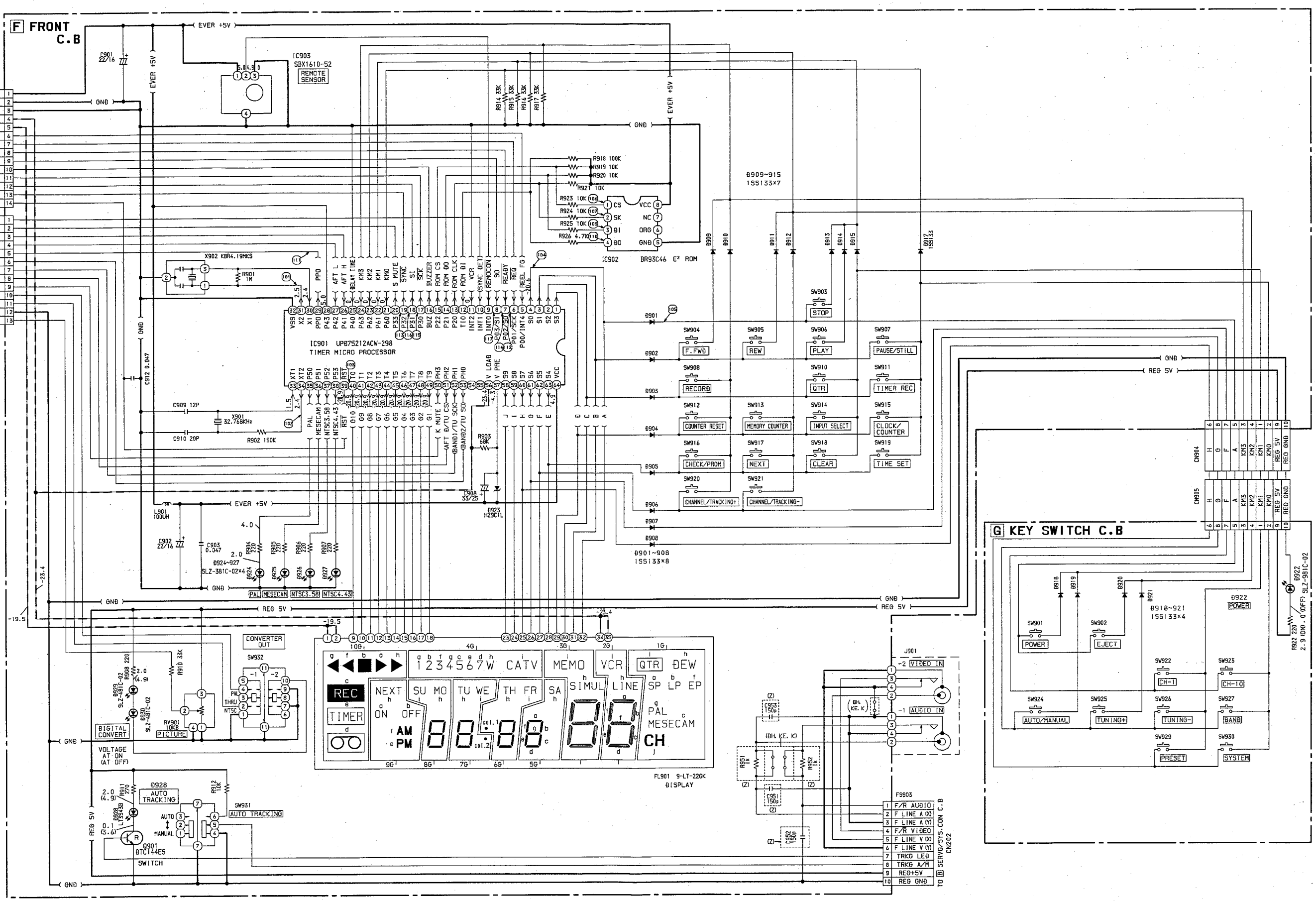


Y POWER SUB C.B (Z ONLY)
C103-3 2200P
H POWER-1 C.B (FOR Z)
F101 2.0A 250V
L101 33mH0.3A
J101 AC~
AC110~240V 50/60HZ
C101 0.22 AC250V
R101 2.2M 1/2W
D101 S1WBA60
C104 150 400V
C105 0.047 630V
R102 47K 3W
C106 100P 1KV
D103 EG01C
285V
430V
R103 270K 1/2W
-100V
C107 1 400V
Q101 2SK903
D G S
C110 1000P
R111 27k
R108 0.22 2W
HB100 HIC101
HIC101 SWITCHING DRIVER
R104 150K 1/4W
R106 220 1/2W
C112 0.01
R107 1.2K 1/2W
R110 1.5K 1/4W
R109 680 1/4W
D106 1SS270
D102 1SS270
D105 RB3.6E5-B2
(PRIMARY GND)
C102 3300P
←○:WAVE FORMS NO.
121 122A 122B 123 124A 124B 125 126
T101 T-9009-4
I POWER-2 C.B (FOR Z)
D201 S3LA20
18.2
L201 39uH
C203 680 25V
D205 HZ24BP-TK
C204 220 25V
R214 820 1W
D202 S2LA20
12.2
L202 39uH
C205 680 16V
C207 470 16V
D203 S2LA20
6.8
D204 ERB83-006
7.2
C206 1200 10V
C209 560 10V
PQ05RF21 IC204
5.0
R208 4.7K 1/4W
C208 100 10V
IC203 BA17805T
C210 560 10V
C211 100 10V
IC203, 204 REGULATOR
FEED BACK COUPLER
PC101 PC817
R201 240-1/2W
R202 100~470
C201 0.047
C202 0.047
2.5
R205 1.5K 1/4W
R203 5.6k 1/4W
RV201 1K
POWER VOLTAGE ADJ.
VARIABLE VOLTAGE
IC201 AN1431T-TA
(GND)
BT101
1 UNREG+18V
2 UNREG GND
3 UNREG GND
4 EVER+12V
5 REG 5V
6 REG GND
7 REG GND
8 EVER+5V
9 P-ON
TO B SERVO/SYS.CON C.B CN203
BT102
1 EVER+5V
2 REG 5V
3 REG GND
4 REG GND
5 DIG 5V
6 DIG GND
TO A MAIN C.B CN405
(VIDEO SECTION)

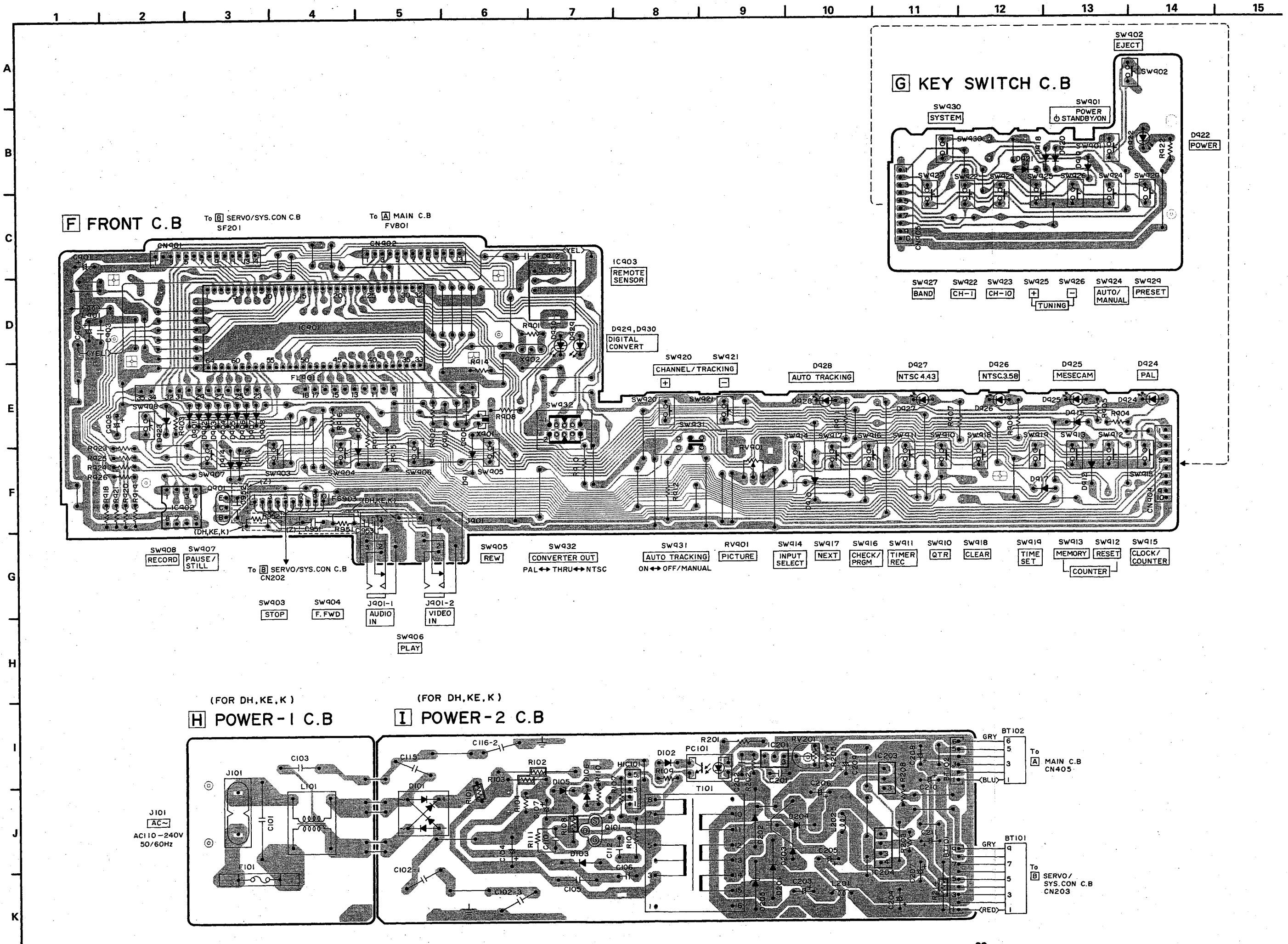


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
A B C
Y POWER SUB C.B (Z ONLY)
C103
H POWER-1 C.B (FOR Z)
I POWER-2 C.B (FOR Z)
J101 AC~ AC110-240V 50/60Hz
J101 L101 C101 F101
D101 R101 C102 C104 C105 R111
R102 R103 D105 D102 R104 R107 Q101 HIC101 R106 C107 D103 C106 R108
R201 PC101 IC201 RV201 T101
IC203 IC204 C201 C209 C203 C204 C205 C207 C208 R208
GRY BT102 6 5 3 1 WHT
To A MAIN C.B CN405
GRY BT101 9 7 5 3 1 WHT
To B SERVO/SYS.CON C.B CN203

SCHEMATIC DIAGRAM – 14 (FRONT SECTION)


F FRONT C.B
G KEY SWITCH C.B
CN901
EVER +5V
UNREG GND
UNREG -24V
UNREG -20V
REEL FG
REQ
READY
SO
BUZZER
SCK
SI
SYNC
RST
TO B SERVO/SYS.CON C.B SF201 (CN201)
SYNC DET
S MUTE
AFT H
AFT L
PPO
BAND2
BAND1
AFT D
K MUTE
DIG PAL
DIG NT
REG GND
P CONT
CN902
TO A MAIN C.B (TUNER SECTION) FV801
IC903 SBX1610-52 REMOTE SENSOR
IC901 UPD75212ACW-298 TIMER MICRO PROCESSOR
IC902 BR93C46 E² ROM
X902 KBR4.19MKS
X901 32.768KHz
C909 12P
C910 20P
R902 150K
L901 100UH
D901~908 1SS133×8
D909~915 1SS133×7
D918~921 1SS133×4
D924~927 SLZ-381C-02×4
SW903 STOP
SW904 F.FWD
SW905 REW
SW906 PLAY
SW907 PAUSE/STILL
SW908 RECORD
SW910 QTR
SW911 TIMER REC
SW912 COUNTER RESET
SW913 MEMORY COUNTER
SW914 INPUT SELECT
SW915 CLOCK/COUNTER
SW916 CHECK/PROG
SW917 NEXT
SW918 CLEAR
SW919 TIME SET
SW920 CHANNEL/TRACKING+
SW921 CHANNEL/TRACKING-
SW901 POWER
SW902 EJECT
SW922 CH-1
SW923 CH-10
SW924 AUTO/MANUAL
SW925 TUNING+
SW926 TUNING-
SW927 BAND
SW929 PRESET
SW930 SYSTEM
D922 POWER
SW931 AUTO TRACKING
SW932 CONVERTER OUT
DIGITAL CONVERT
RV901 10KB PICTURE
D928 AUTO TRACKING
Q901 DTC144ES SWITCH
VOLTAGE AT ON (AT OFF)
PAL MESECAM NTSC3.58 NTSC4.43
FL901 9-LT-22GK DISPLAY
J901 VIDEO IN AUDIO IN
FS903
F/R AUDIO
F LINE A (X)
F LINE A (Y)
F/R VIDEO
F LINE V (X)
F LINE V (Y)
TRKG LED
TRKG A/M
REG+5V
REG GND
TO B SERVO/SYS.CON C.B CN202
CN904
CN905
GND
REG 5V
EVER +5V

WIRING – 6 (FRONT/POWER UNIT SECTION)


1
2
3
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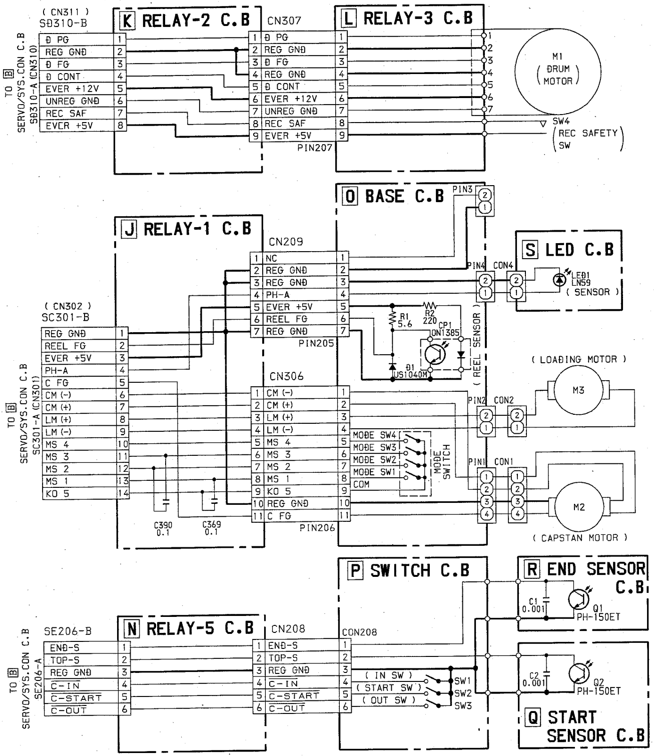
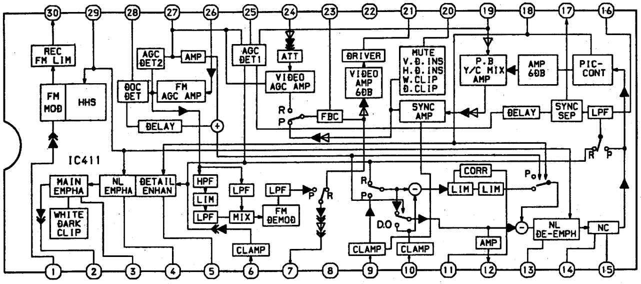
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
G KEY SWITCH C.B
SW902
EJECT
SW930
SYSTEM
SW901
POWER
⏻ STANDBY/ON
D922
POWER
SW927
BAND
SW922
CH-1
SW923
CH-10
SW925
+
SW926
−
TUNING
SW924
AUTO/
MANUAL
SW929
PRESET
F FRONT C.B
To B SERVO/SYS.CON C.B
SF201
To A MAIN C.B
FV801
CN901
CN902
IC901
IC903
REMOTE
SENSOR
D929, D930
DIGITAL
CONVERT
SW920
SW921
CHANNEL/TRACKING
+
−
D928
AUTO TRACKING
D927
NTSC 4.43
D926
NTSC3.58
D925
MESECAM
D924
PAL
SW908
RECORD
SW907
PAUSE/
STILL
To B SERVO/SYS.CON C.B
CN202
SW903
STOP
SW904
F.FWD
J901-1
AUDIO
IN
J901-2
VIDEO
IN
SW906
PLAY
SW905
REW
SW932
CONVERTER OUT
PAL↔THRU↔NTSC
SW931
AUTO TRACKING
ON↔OFF/MANUAL
RV901
PICTURE
SW914
INPUT
SELECT
SW917
NEXT
SW916
CHECK/
PRGM
SW911
TIMER
REC
SW910
QTR
SW918
CLEAR
SW919
TIME
SET
SW913
MEMORY
SW912
RESET
COUNTER
SW915
CLOCK/
COUNTER
(DH, KE, K)
(FOR DH, KE, K)
H POWER-1 C.B
(FOR DH, KE, K)
I POWER-2 C.B
J101
AC~
AC110–240V
50/60Hz
F101
L101
C101
C103
D101
T101
PC101
IC201
IC203
IC204
RV201
BT102
GRY
6
5
3
1
(BLU)
To
A MAIN C.B
CN405
BT101
GRY
9
7
5
3
1
(RED)
To
B SERVO/
SYS.CON C.B
CN203

SCHEMATIC DIAGRAM – 15 (MECHANICAL SECTION)

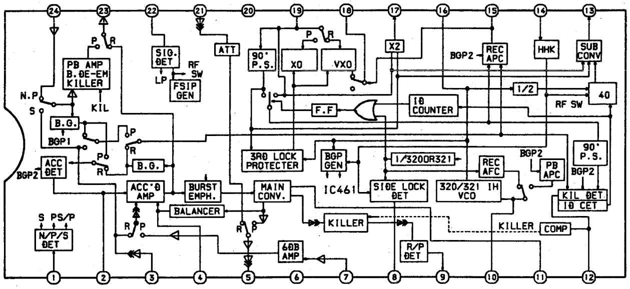

K RELAY-2 C.B
(CN311)
SD310-B
TO B SERVO/SYS.CON C.B SD310-A (CN310)
D PG 1
REG GND 2
D FG 3
D CONT 4
EVER +12V 5
UNREG GND 6
REC SAF 7
EVER +5V 8
CN307
1 D PG
2 REG GND
3 D FG
4 REG GND
5 D CONT
6 EVER +12V
7 UNREG GND
8 REC SAF
9 EVER +5V
PIN207
L RELAY-3 C.B
M1 (DRUM MOTOR)
SW4
(REC SAFETY SW)
O BASE C.B
PIN3
PIN4
CON4
S LED C.B
LED1 LN59
(SENSOR)
J RELAY-1 C.B
CN209
1 NC
2 REG GND
3 REG GND
4 PH-A
5 EVER +5V
6 REEL FG
7 REG GND
PIN205
R1 5.6
R2 220
CP1 ON1385
D1 US1040M
(REEL SENSOR)
(CN302)
SC301-B
TO B SERVO/SYS.CON C.B SC301-A (CN301)
REG GND 1
REEL FG 2
EVER +5V 3
PH-A 4
C FG 5
CM (-) 6
CM (+) 7
LM (+) 8
LM (-) 9
MS 4 10
MS 3 11
MS 2 12
MS 1 13
KO 5 14
CN306
1 CM (-)
2 CM (+)
3 LM (+)
4 LM (-)
5 MS 4
6 MS 3
7 MS 2
8 MS 1
9 KO 5
10 REG GND
11 C FG
PIN206
C390 0.1
C369 0.1
MODE SW4
MODE SW3
MODE SW2
MODE SW1
COM
MODE SWITCH
(LOADING MOTOR)
M3
PIN2
CON2
PIN1
CON1
M2
(CAPSTAN MOTOR)
P SWITCH C.B
R END SENSOR C.B
C1 0.001
Q1 PH-150ET
N RELAY-5 C.B
SE206-B
TO B SERVO/SYS.CON C.B SE206-A
END-S 1
TOP-S 2
REG GND 3
C-IN 4
C-START 5
C-OUT 6
CN208
1 END-S
2 TOP-S
3 REG GND
4 C-IN
5 C-START
6 C-OUT
CON208
(IN SW)
(START SW)
(OUT SW)
SW1
SW2
SW3
C2 0.001
Q2 PH-150ET
Q START SENSOR C.B

IC, BLOCK DIAGRAM

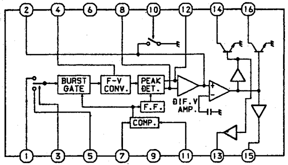
IC, LA7323


30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
REC FM LIM
AGC DET2
AMP
AGC DET1
ATT
DRIVER
MUTE V.D.INS H.D.INS W.CLIP D.CLIP
P.B Y/C MIX AMP
AMP 6DB
PIC-CONT
FM MOD
HHS
DOC DET
FM AGC AMP
VIDEO AGC AMP
VIDEO AMP 6DB
SYNC AMP
DELAY
SYNC SEP
LPF
R
P
FBC
DELAY
IC411
MAIN EMPHA
NL EMPHA
DETAIL ENHAN
HPF
LIM
LPF
LPF
LPF
MIX
FM DEMOD
CORR
LIM
LIM
WHITE DARK CLIP
CLAMP
CLAMP
CLAMP
D.O
AMP
NL DE-EMPH
NC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

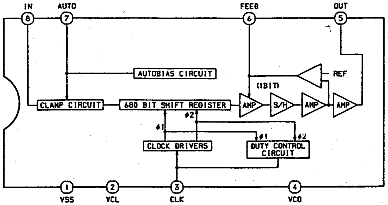
IC, LA7333


24
23
22
21
20
19
18
17
16
15
14
13
PB AMP B.DE-EM KILLER
SIG. DET
RF SW
LP
FSIP GEN
ATT
90° P.S.
XO
VXO
X2
BGP2
REC APC
HHK
SUB CONV
N.P
S
KIL
B.G.
BGP1
F.F
1/2
40
RF SW
10 COUNTER
ACC DET
BGP2
B.G.
3RD LOCK PROTECTER
BGP GEN
1/320DR321
REC AFC
BGP2
90° P.S.
PB APC
BGP2
ACC'D AMP
BURST EMPH.
MAIN CONV.
IC461
SIDE LOCK DET
320/321 IH VCO
KIL DET
10 CET
BALANCER
S PS/P
N/P/S DET
KILLER
KILLER
COMP
6DB AMP
R/P DET
1
2
3
4
5
6
7
8
9
10
11
12

IC, LA7311


2
4
6
8
10
12
14
16
BURST GATE
F-V CONV.
PEAK DET.
F.F.
DIF.V AMP.
COMP.
1
3
5
7
9
11
13
15

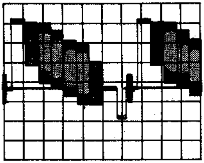
IC, CXL5001P
IC, CXL5003P


IN
8
AUTO
7
FEED
6
OUT
5
AUTOBIAS CIRCUIT
REF
(1BIT)
CLAMP CIRCUIT
680 BIT SHIFT REGISTER
AMP
S/H
AMP
AMP
φ2
φ1
CLOCK DRIVERS
φ1
φ2
DUTY CONTROL CIRCUIT
1
VSS
2
VCL
3
CLK
4
VCO

WAVE FORM
VIDEO SECTION

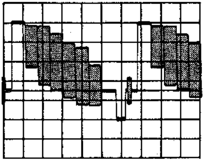
LINE IN (EE, PAL)
200mV/div.
10 μ s/div.

①



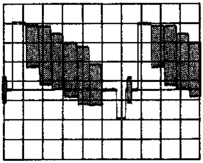
LINE OUT (EE, PAL)
200mV/div.
10 μ s/div.

⑤



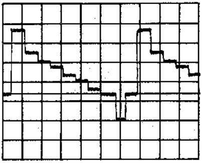
IC401 Pin㉔ (EE, PAL)
200mV/div.
10 μ s/div.

②



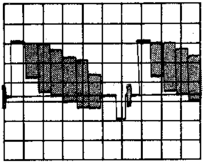
IC401 Pin⑥ (EE, PAL)
100mV/div.
10 μ s/div.

⑥



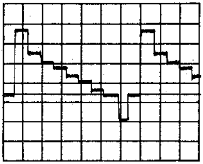
IC401 Pin㉑ (EE, PAL)
500mV/div.
10 μ s/div.

③



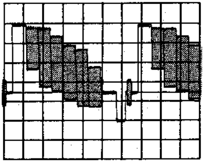
IC401 Pin③ (EE, PAL)
100mV/div.
10 μ s/div.

⑦



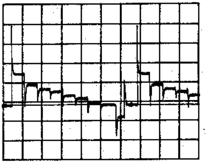
IC401 Pin⑦ (EE, PAL)
200mV/div.
10 μ s/div.

④



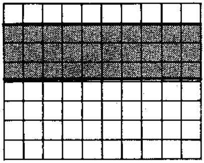
IC401 Pin② (EE, PAL)
200mV/div.
10 μ s/div.

⑧



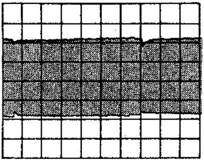
IC401 Pin㉚ (EE, PAL)
500mV/div.
10 µs/div.

⑨



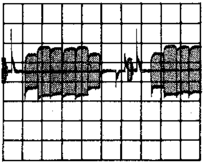
HV403 (KE, DH), VH403 (K, Z) Pin⑥ (EE, PAL)
100mV/div.
10 µs/div.

⑩



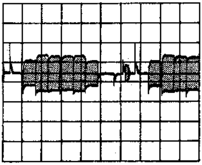
IC501 Pin㉑ (EE, PAL)
200mV/div.
10 µs/div.

⑪



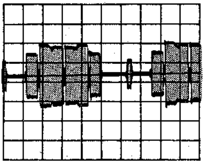
IC501 Pin⑤ (EE, PAL)
200mV/div.
10 µs/div.

⑫



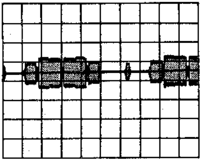
IC501 Pin③ (EE, PAL)
50mV/div.
10 µs/div.

⑬



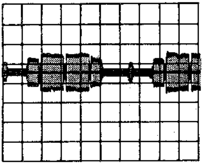
IC501 Pin⑨ (EE, PAL)
500mV/div.
10 µs/div.

⑭



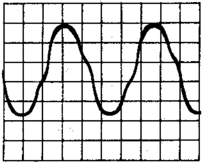
HV403 (KE, DH), VH403 (K, Z) Pin⑧ (EE, PAL)
20mV/div.
10 µs/div.

⑮



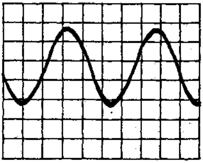
IC501 Pin ⑱ (EE, PAL)
200mV/div.
50ns/div.

⑯



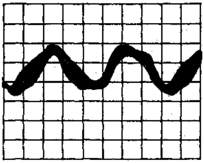
IC501 Pin⑲ (EE, PAL)
200mV/div.
50ns/div.

⑰



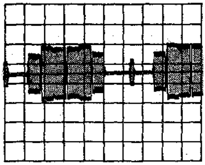
IC501 Pin⑬ (EE, PAL)
100mV/div.
50ns/div.

⑱



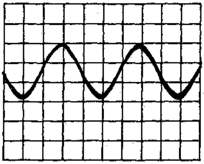
IC501 Pin㉓ (EE, PAL)
200mV/div.
10 μ s/div.

⑲



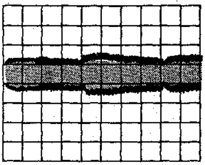
IC501 Pin⑪ (EE, PAL)
50mV/div.
50ns/div.

⑳



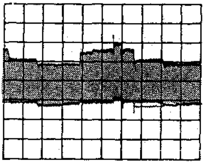
VH403 Pin⑨ (PB, PAL)
100mV/div.
5ms/div.

㉑



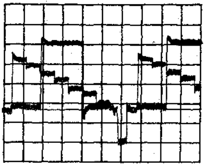
IC401 Pin⑦ (PB, PAL)
500mV/div.
10 μ s/div.

㉒



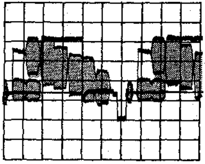
IC401 Pin⑨ (PB, PAL)
100mV/div.
10 μ s/div.

㉓

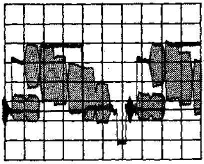


IC401 Pin㉑ (PB, PAL)
500mV/div.
10 μ s/div.

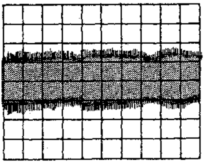
㉔



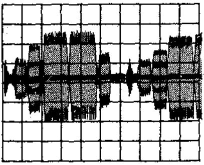
LINE OUT (PB, PAL)
200mV/div.
10μs/div.


㉕

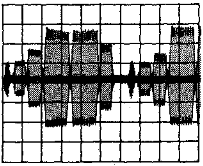
HV403 (KE, DH), VH403 (K, Z) Pin⑪ (PB, PAL)
100mV/div.
5ms/div.


㉖

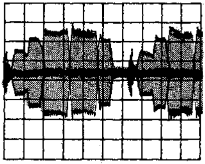
IC501 Pin⑦ (PB, PAL)
50mV/div.
10μs/div.


㉗

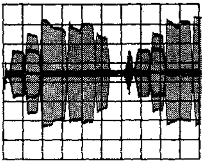
IC501 Pin⑤ (PB, PAL)
200mV/div.
10μs/div.


㉘

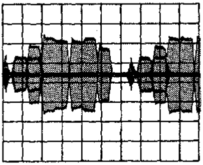
IC501 Pin③ (PB, PAL)
50mV/div.
10μs/div.


㉙

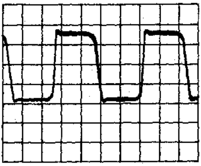
IC501 Pin㉔ (PB, PAL)
50mV/div.
10μs/div.


㉚

IC501 Pin㉓ (PB, PAL)
200mV/div.
10μs/div.

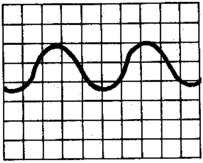

㉛

IC501 Pin⑱ (PB, PAL)
200mV/div.
50ns/div.


㉜

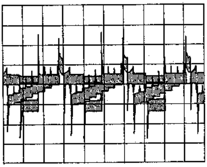
IC501 Pin⑲ (PB, PAL)
200mV/div.
50ns/div.

㉝



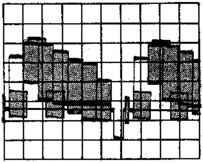
FL401 OUT(PB, PAL)
100mV/div.
20 μ s/div.

㉞



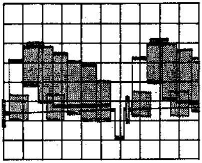
LINE IN (EE, NTSC)
200mV/div.
10 μ s/div.

㊵



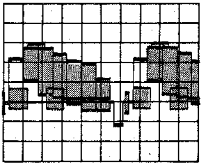
IC401 Pin㉔ (EE, NTSC)
200mV/div.
10 μ s/div.

㊶



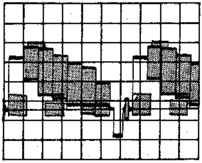
IC401 Pin㉑ (EE, NTSC)
500mV/div.
10 μ s/div.

㊷



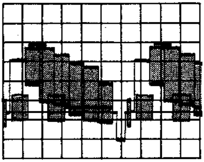
LINE OUT (EE, NTSC)
200mV/div.
10 μ s/div.

㊸



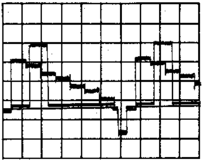
IC401 Pin ⑦ (EE, NTSC)
200mV/div.
10 µs/div.

㊹



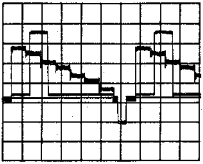
IC401 Pin ⑥ (EE, NTSC)
100mV/div.
10 µs/div.

㊺



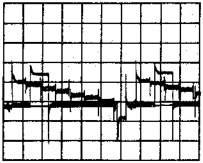
IC401 Pin ③ (EE, NTSC)
100mV/div.
10 µs/div.

㊻



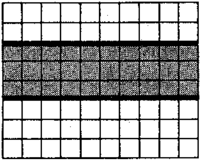
IC401 Pin ② (EE, NTSC)
200mV/div.
10 µs/div.

㊼



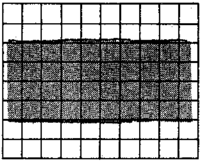
IC401 Pin ㉚ (EE, NTSC)
500mV/div.
10 µs/div.

㊽



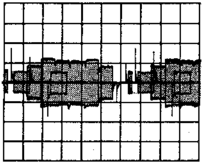
HV403 (KE, DH), VH403 (K, Z) Pin ⑥ (EE, NTSC)
100mV/div.
10 µs/div.

㊾



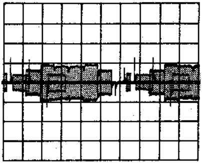
IC501 Pin ㉑ (EE, NTSC)
200mV/div.
10 µs/div.

㊿



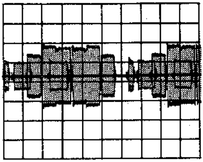
IC501 Pin ⑤ (EE, NTSC)
200mV/div.
10 µs/div.

(51)



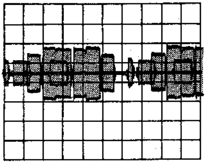
IC501 Pin ③ (EE, NTSC)
50mV/div.
10 μs/div.

(52)



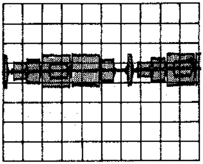
IC501 Pin ㉓ (EE, NTSC)
200mV/div.
10 μs/div.

(53)



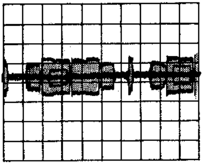
IC501 Pin ⑨ (EE, NTSC)
500mV/div.
10 μs/div.

(54)



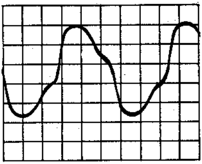
HV403 (KE, DH), VH403 (K, Z) Pin ⑧ (EE, NTSC)
20mV/div.
10 μs/div.

(55)



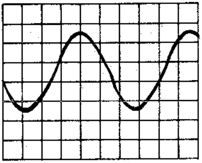
IC501 Pin ⑱ (EE, NTSC)
200mV/div.
50ns/div.

(56)



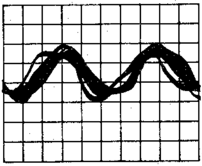
IC501 Pin ⑲ (EE, NTSC)
200mV/div.
50ns/div.

(57)



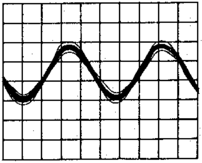
IC501 Pin ⑬ (EE, NTSC)
100mV/div.
50ns/div.

(58)

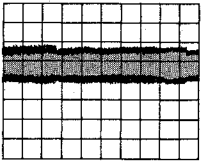


IC501 Pin ⑪ (EE, NTSC)
50mV/div.
50ns/div.

(59)

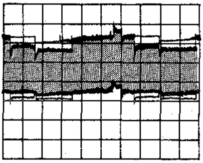


HV403 (KE, DH), VH403 (K, Z) Pin⑨(PB, NTSC)
100mV/div.
5ms/div.



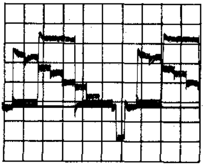
(60)

IC401 Pin⑦(PB, NTSC)
500mV/div.
10 μ s/div.



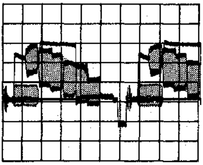
(61)

IC401 Pin⑨(PB, NTSC)
100mV/div.
10 μ s/div.



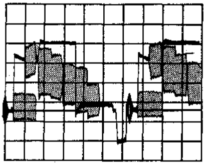
(62)

IC401 Pin㉑ (PB, NTSC)
500mV/div.
10 μ s/div.



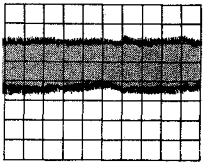
(63)

LINE OUT (PB, NTSC)
200mV/div.
10 μ s/div.



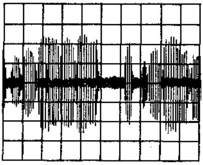
(64)

HV403 (KE, DH), VH403 (K, Z) Pin⑪(PB, NTSC)
100mV/div.
5ms/div.



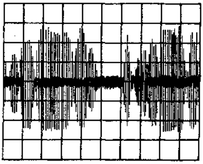
(65)

IC501 Pin⑦(PB, NTSC)
50mV/div.
10 μ s/div.



(66)

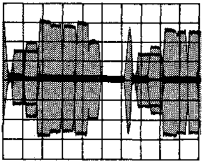
IC501 Pin⑤(PB, NTSC)
200mV/div.
10 μ s/div.



(67)

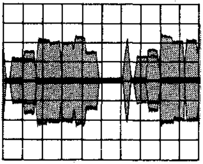
IC501 Pin ③ (PB, NTSC)
50mV/div.
10μs/div.

(68)



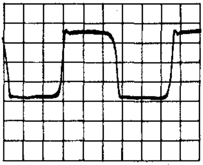
IC501 Pin ㉔ (PB, NTSC)
50mV/div.
10μs/div.

(69)



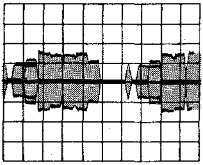
IC501 Pin ⑱ (PB, NTSC)
200mV/div.
50ns/div.

(70)



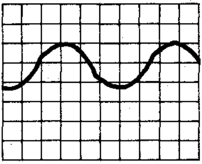
IC501 Pin ㉓ (PB, NTSC)
200mV/div.
10μs/div.

(71)



IC501 Pin ⑲ (PB, NTSC)
200mV/div.
50ns/div.

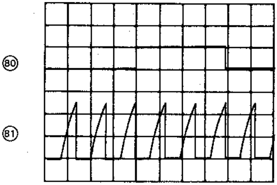
(72)



SERVO SECTION

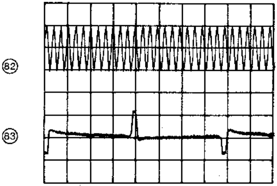
(80) IC301 Pin㊺ RF SWP (25Hz)
5V/div. (DC) ※NTSC: 30Hz
5ms/div.

(81) IC301 Pin⑥ TR MM
2V/div. (DC)
5ms/div.

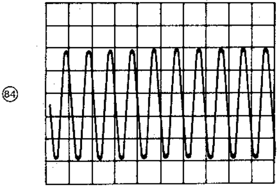


(82) IC301 Pin⑨ D FG (600Hz)
11V/div. ※NTSC: 720Hz
5ms/div.

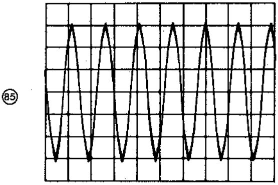
(83) IC301 Pin⑦ D PG
2V/div.
5ms/div.



(84) IC301 Pin㊲ C FG (505Hz)
500mV/div. ※NTSC: 720Hz
2ms/div.

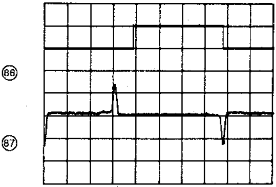


(85) IC301 Pin㊷ 3FSC (13.3008MHz)
※NTSC: 10.73MHz
100mV/div. (AC)
50ns/div.



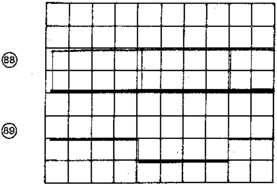
(86) IC301 Pin㊺ RF SWP
5V/div. (DC)
5ms/div.

(87) IC301 Pin㊱ CTL
1V/div. (AC)
5ms/div.



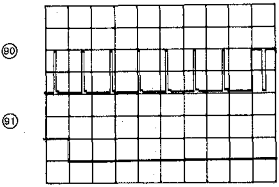
(88) IC301 Pin(60) COMP SYNC
2V/div.
5ms/div.

(89) IC301 Pin㊺ RF SWP
5V/div.
5ms/div.

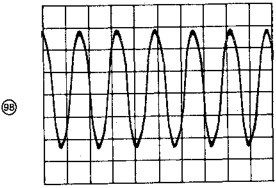


(90) IC301 Pin(50) COMP SYNC
2V/div.
50 µs/div.

(91) IC301 Pin(45) RF SWP
5V/div.
50 µs/div.

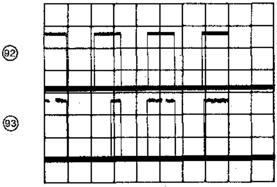


(98) IC201 Pin(25) EX
1V/div. (AC)
100ns/div.

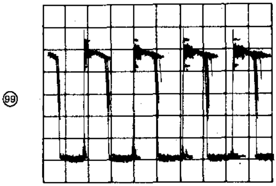


(92) IC301 Pin(54) S CLK
2V/div. (DC)
1ms/div.

(93) IC301 Pin(53) S DATA
2V/div. (DC)
1ms/div.

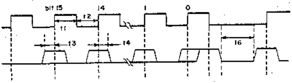


(99) T101 Pin④
5V/div. (DC)
2 µs/div.



(94) SERIAL CLOCK

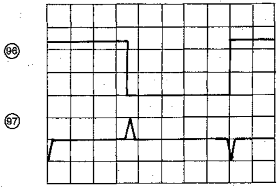
(95) SERIAL DATA



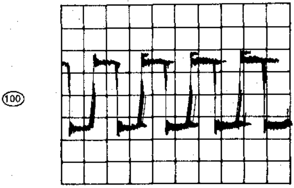
※SERVO DATA COMPONENT 64 BIT AND 16 BIT FLOW EACH 4 TIMES. 64 BIT TRANSMIT ONE AFTER ANOTHER

(96) IC301 Pin (56) CTLP
2V/div.
5ms/div.

(97) IC301 Pin (36) CTL
1V/div.
5ms/div.



(100) T101 Pin①
2V/div. (DC)
2 µs/div.

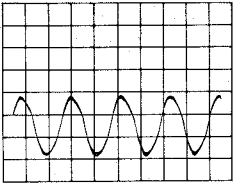


MICON SECTION

PWM OUTPUT FOR MICON CLOCK OR TUNING

IC901 Pin㉛ 4.19MHz (For MAIN)
2V/div.
0.1 μs/div.

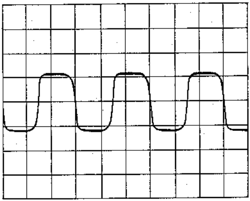
(101)



FOR CLOCK

IC901 Pin㉞ 32.768kHz (For CLOCK)
2V/div. (DC)
10 μs/div.

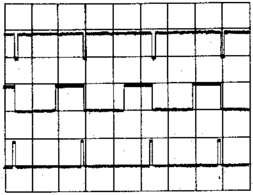
(102)



PWM VARIATION OF TUNER UP FROM TUNER V_L BAND

IC901 Pin㉙
5V/div.
100 μs/div.

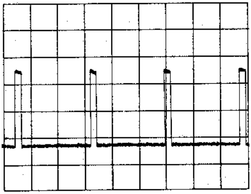
(111)



MATRIX FOR FL LIGHT OR KEY MATRIX OUTPUT

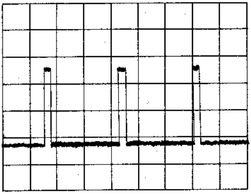
IC901 Pin㊵
10V/div.
2ms/div.

(103)



IC901 Pin④
10V/div.
2ms/div.

(104)

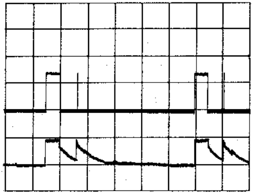


IC901 Pin④
20V/div.
1ms/div.

D901 K
5V/div.
1ms/div.

(104)

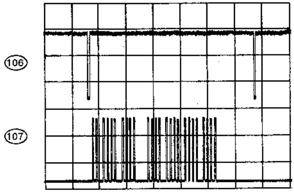
(105)



COMMUNICATION FOR BETWEEN E^{2}PROM AND CHANNEL DATA LOOKED MICON SIDE

IC901 Pin ⑮ (ROM CS)
2V/div.
100 μs/div.

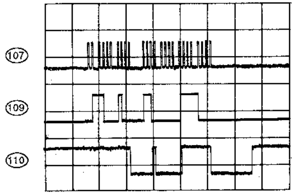
IC901 Pin ⑬ (ROM CLK)
2V/div.
100 μs/div.



IC901 Pin ⑬ (ROM CLK)
5V/div.
100 μs/div.

IC901 Pin ⑭ (ROM DO)
5V/div.
100 μs/div.

IC901 Pin ⑫ (ROM DI)
5V/div.
100 μs/div.



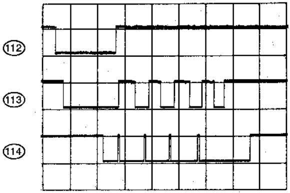
SERIAL COMMUNICATION FOR BETWEEN TIMER MICON AND MECH MICON (MECH MICON → TIMER MICON)

EXAMPLE: END SENSOR ON ↔ OFF

IC901 Pin ⑥ ($\overline{\text{REQ}}$)
5V/div.
500 μs/div.

IC901 Pin ⑲ ($\overline{\text{SYNC}}$)
5V/div.
500 μs/div.

IC901 Pin ⑦ ($\overline{\text{READY}}$)
5V/div.
500 μs/div.

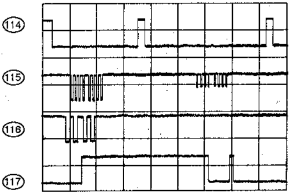


IC901 Pin ⑦ ($\overline{\text{READY}}$)
5V/div.
100 μs/div.

IC901 Pin ⑰ ($\overline{\text{SCK}}$)
5V/div.
100 μs/div.

IC901 Pin ⑱ ($\overline{\text{SI}}$)
5V/div.
100 μs/div.

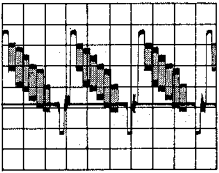
IC901 Pin ⑧ ($\overline{\text{SO}}$)
5V/div.
100 μs/div.



TUNER SECTION

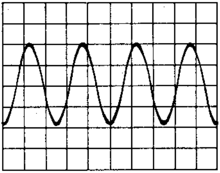
TP801 (TUNER VIDEO)
220mV/div.
20µs/div.

(118)



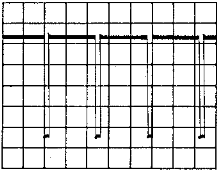
TP802 (TUNER AUDIO)
100mV/div.
1ms/div.

(119)



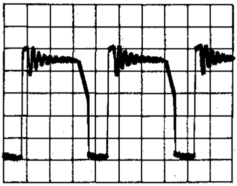
IC801 Pin ⑦ (PNM)
1V/div.
100µs/div.

(120)



POWER SECTION

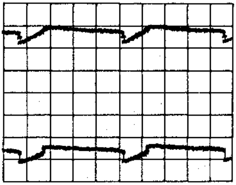
T101 Pin⑤
50Vp-p
2 μ s/div.



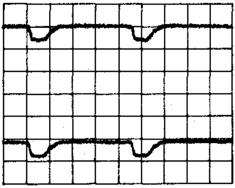
(121)

A: PC101 Pin④
5V/div.
2 μ s/div.

B: PC101 Pin③
2V/div.
2 μ s/div.

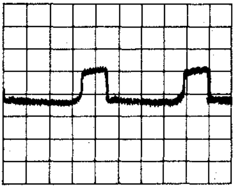


A: C107⊕
B: HIC101 Pin②
120V/div.
2 μ s/div.



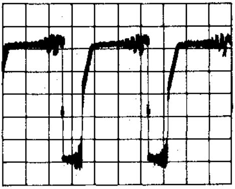
(122)

HIC101 Pin④
5V/div.
2 μ s/div.



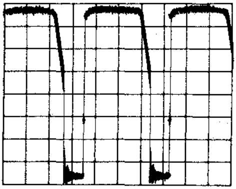
(125)

T101 Pin⑦
5V/div.
2 μ s/div.



(123)

T101 Pin⑥
10V/div.
2 μ s/div.

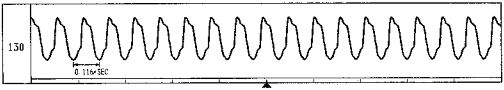


(126)

When checking waveforms (121)~(125), connect the negative (−) terminal of C104 to ground.
When checking waveforms (126), connect pin (2) of BT101 to ground.
Waveforms should be measured in PB mode and with AC 220V power input.

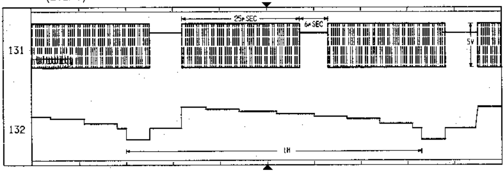
DIGITAL SECTION

(130) IC10 Pin ⑪ 2V/DIV(6.4Vp-p) 0.05 μ S/DIV

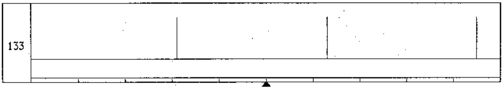


(131) IC2 Pin ⑯ 2V/DIV(6.0Vp-p) 10 μ S/DIV

(132) CN1 Pin ① 0.5V/DIV0.5 (1Vp-p) 10 μ S/DIV
(DIG Y)

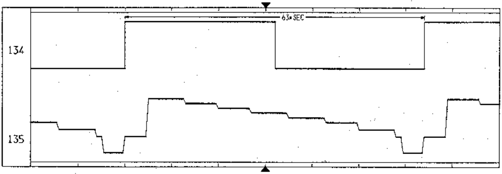


(133) IC2 Pin ⑤ 2V/DIV(5.0Vp-p) 10 μ S/DIV

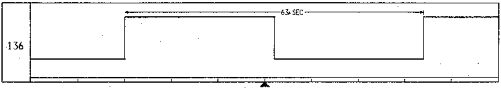


(134) IC1 Pin ㊺ 2V/DIV(5Vp-p) 10 μ S/DIV

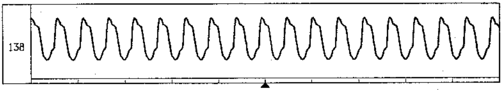
(135) CN1 Pin ① 0.5V/DIV(1Vp-p) 10 μ S/DIV
(DIG Y)



(136) IC1 Pin ㊻ 2V/DIV(5Vp-p) 10 μ S/DIV



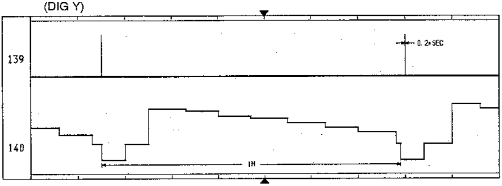
(138) IC1 Pin (64) 2V/DIV(5.0Vp-p) 0.05 μ S/DIV



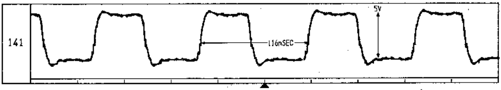
(139) IC4 Pin (24) 2V/DIV(5.0Vp-p) 10 μ S/DIV

(140) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV

(DIG Y)



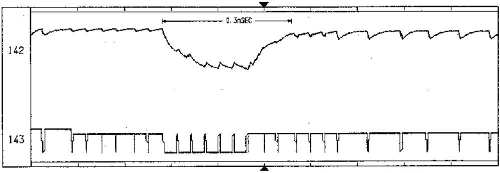
(141) IC1 Pin (68) 2V/DIV(6.4Vp-p) 0.05 μ S/DIV



(142) IC1 Pin (62) 2V/DIV(3.0Vp-p) 100 μ S/DIV

(143) CN1 Pin ⑤ 0.5V/DIV(4.0Vp-p) 100 μ S/DIV

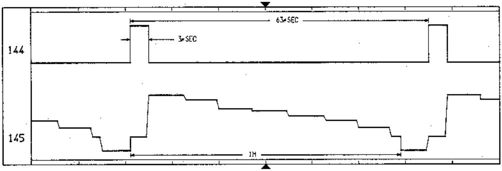
(DIG Y)



(144) IC6 Pin ⑨ 2V/DIV(5Vp-p) 10 μ S/DIV

(145) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV

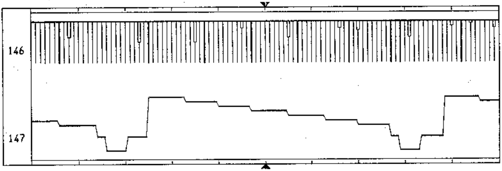
(DIG Y)



(146) IC6 Pin ⑬ 2V/DIV(5Vp-p) 10 μ S/DIV

(147) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 10 μ S/DIV

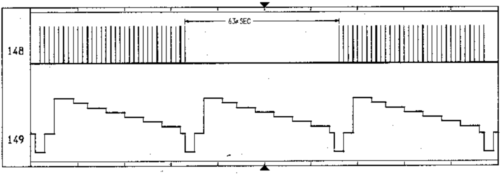
(DIG Y)



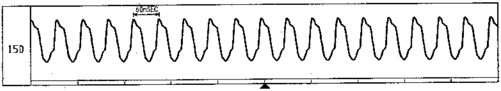
(148) IC6 Pin ⑪ , ⑫ 2V/DIV(5Vp-p) 20 μ S/DIV

(149) CN1 Pin ⑤ 0.5V/DIV(1Vp-p) 20 μ S/DIV

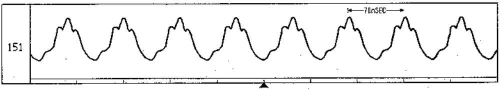
(DIG Y)



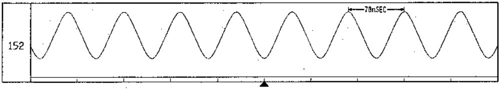
(150) IC1 Pin (69) 2V/DIV(7.2Vp-p) 0.05 μ S/DIV



(151) IC4 Pin ⑩ 0.5V/DIV(0.9Vp-p) 0.05 μ S/DIV

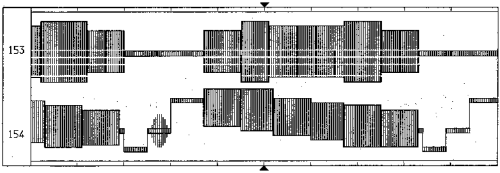


(152) IC4 Pin ⑫ 2V/DIV(0.8Vp-p) 0.05 μ S/DIV



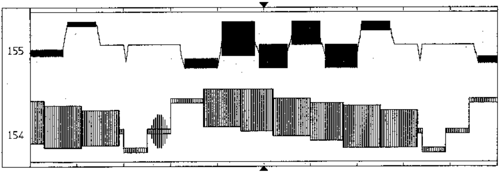
(153) IC4 Pin ③ , ⑭ , ⑯ 0.1V/DIV(280mVp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1Vp-p) 10 μ S/DIV



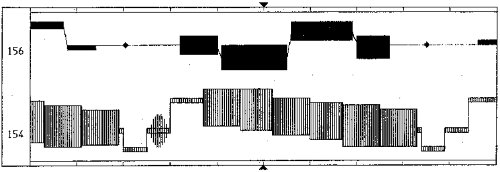
(155) IC4 Pin ⑲ 2V/DIV(1.2Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



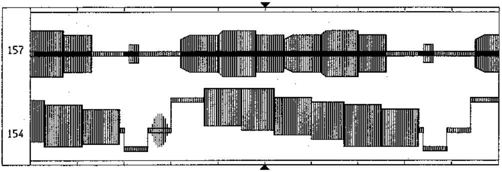
(156) IC4 Pin ⑳ 2V/DIV(1.5Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



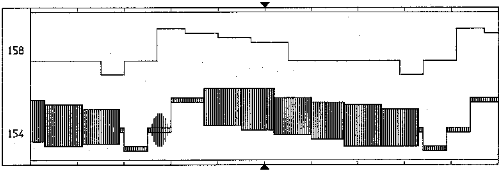
(157) IC9 Pin ⑤ 2V/DIV(1.1Vp-p) 10 μ S/DIV

(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV

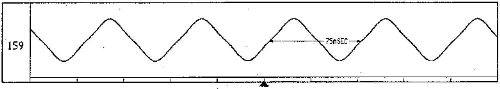


(158) IC10 Pin ⑥ 1V/DIV(0.6Vp-p) 10 μ S/DIV

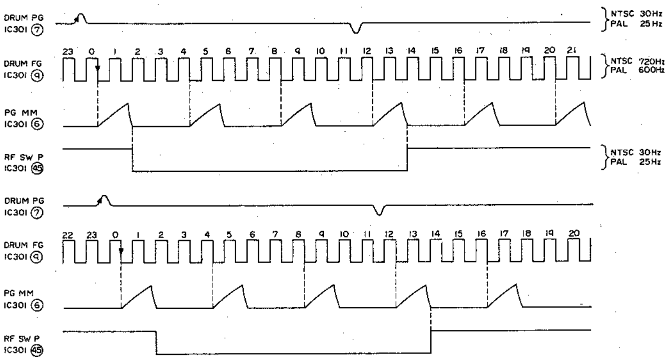
(154) VIDEO OUT 0.5V/DIV(1.0Vp-p) 10 μ S/DIV



(159) IC19, 20 Pin ③ 0.5V/DIV(0.3Vp-p) 0.05 μ S/DIV

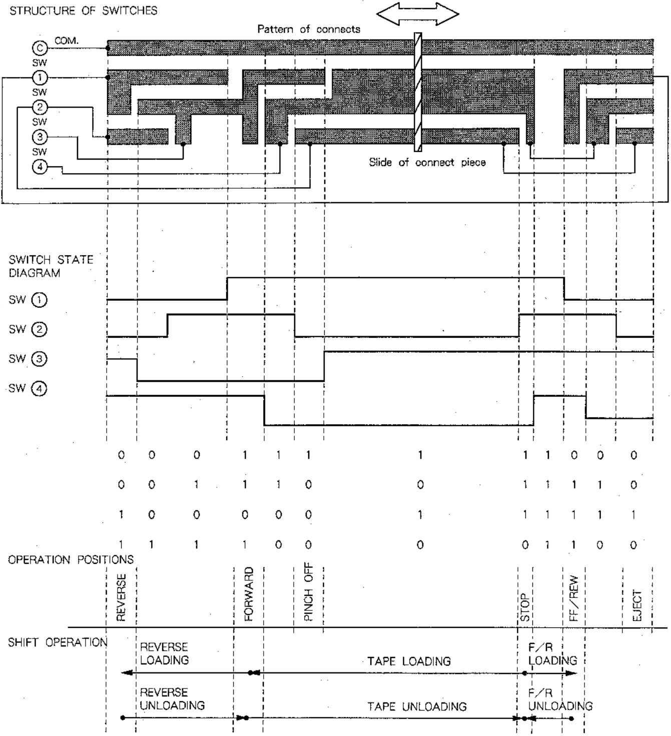


DRUM SERVO SYSTEM TIMING CHART


DRUM PG
IC301 ⑦
DRUM FG
IC301 ⑨
PG MM
IC301 ⑥
RF SW P
IC301 ㊺
NTSC 30Hz
PAL 25Hz
NTSC 720Hz
PAL 600Hz
NTSC 30Hz
PAL 25Hz
23 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
22 23 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

SYSTEM SWITCH MODE

※ When SYSTEM CONTROL IC has run away, SYSTEM CONTROL IC will not accept any mode.


STRUCTURE OF SWITCHES
Pattern of connects
COM.
Ⓒ
SW ①
SW ②
SW ③
SW ④
Slide of connect piece
SWITCH STATE DIAGRAM
SW ①
SW ②
SW ③
SW ④
0 0 0 1 1 1 1 1 1 0 0 0
0 0 1 1 1 0 0 1 1 1 1 0
1 0 0 0 0 0 1 1 1 1 1 1
1 1 1 1 0 0 0 0 1 1 0 0
OPERATION POSITIONS
REVERSE
FORWARD
PINCH OFF
STOP
FF/REW
EJECT
SHIFT OPERATION
REVERSE LOADING
TAPE LOADING
F/R LOADING
REVERSE UNLOADING
TAPE UNLOADING
F/R UNLOADING

SWITCH				Position
SW1	SW2	SW3	SW4	
0	0	1	0	Front loading, Eject
0	1	1	0	Intermediate
0	1	1	1	F.F, REW
1	1	1	1	Intermediate
1	1	1	0	Stop
1	0	1	0	Tape loading
1	0	0	0	Gear change
1	1	0	0	Intermadiate
1	1	0	1	Play (Pause)
0	1	0	1	Intermediate
0	0	0	1	Intermediate
0	0	1	1	Reset

IC DESCRIPTION

IC1, MB88202H－1093

Pin No.	Pin Name	I/O	Description
1	LP	O	Outputs the current playback format and speed in combination with pins 13 and 14 (See the Table below).
2	–	–	Connected to IC power supply (5V).
3	–	–	
4	–	–	
5	–	–	
6	–	–	Not connected.
7	EX	I	Clock input.
8	VSS	–	Ground.
9	CTL	I	CTL signal input from servo circuit.
10	CFG	I	CFG signal input from servo circuit.
11	JOG	I	JOG mode signal input from system control circuit.
12	–	–	Not connected.
13	N/$\overline{\text{P}}$	O	Output the current playback format and speed in combination with pin 1 (see Table below).
14	S/$\overline{\text{E}}$	O	
15	RST	I	Reset signal input.
16	VCC	VCC	+5V power supply pin.

Pin No.	Pin Name	NTSC • SP	NTSC • LP	NTSC • EP	PAL • SP	PAL • LP
1	LP	L	H	L	L	H
13	NT/$\overline{\text{PAL}}$	H	H	H	L	L
14	SP/$\overline{\text{EP}}$	H	H	L	H	H

H＝5V
L＝0V

IC DESCRIPTION – 1

IC951, HD404302

Pin No.	Pin Name	I/O	Description
1	KA/$\overline{\text{M}}$	O	Outputs a signal which designates the auto or manual status to the mechanism microprocessor.
2	TR. CLK	O	Clock output for transferring tracking data.
3	TR. DATA	O	Playback tracking data output.
4	———	–	Fixed at "L".
5	A/D POS	O	Signal to indicate timing of V LEV A/D conversion.
6	$\overline{\text{NLOCK}}$	O	Signal to indicate that the Noise bar is out of the screen.
7	$\overline{\text{D RST}}$	O	Outputs a reset pulse to the noise cancel circuit to detect the position of noise.
8	TR LED	O	Outputs a tracking LED control signal.
9	———	–	Fixed at "H".
10	T MODE	I	Test mode signal input. ("H" in the test mode)
11	AUTO/$\overline{\text{MAN}}$	I	Auto tracking ON/OFF signal. ("H" in the auto mode)
12	$\overline{\text{ACK}}$	I	Signal to indicate whether or not the playback tracking data is transferred correctly.
13	A/D OUT 1	O	V LEV A/D converted value output 2^0. (LSB)
14	A/D OUT 2	O	V LEV A/D converted value output 2^1.
15	A/D OUT 3	O	V LEV A/D converted value output 2^2.
16	A/D OUT 4	O	V LEV A/D converted value output 2^3.
17	A/D OUT 5	O	V LEV A/D converted value output 2^4.
18	———	–	Fixed at "L".
19	RF SWP	I	Head switching signal.
20	DOC P	I	Receives the noise position detection signal for the noise cancel circuit.
21	GND	–	Ground.
22	AVCC	–	Power supply of A/D converter. (+5V)
23	V LEV	I	Signal to detect the video level. (analog DC)
24	———	–	Fixed at "L".
25	———	–	
26	———	–	
27	AVSS	–	Power supply of A/D converter. (Connected to Ground)
28	TRKG RST	I	Reset signal. ("H" when reset)
29	———	–	Fixed at "H".
30	X	–	Connected to a clock generator.
31	EX	–	
32	VCC	–	Power supply. (+5V)
33	ET/$\overline{\text{BT}}$	I	Fixed at "H".
34	PAL/$\overline{\text{NTSC}}$	I	PAL,NTSC switching signal. ("H" for PAL)
35	PAUSE	I	Detects "H" in the STILL mode to cancel noise.
36	JOG	I	"H" is input during CUE and REV.
37	D-PB	I	"H" is input during PLAY.
38	CTL P	I	Shaped CTL pulse input.
39	C CONT	O	Outputs a noise feed pulse to cancel noise.
40	A/D OUT 6	O	V LEV A/D converted value output 2^5.
41	A/D OUT 7	O	V LEV A/D converted value output 2^6.
42	A/D OUT 8	O	V LEV A/D converted value output 2^7. (MSB)

IC6, μ PC661

Pin No.	Pin Name	I/O	Description
1	DV_{CC}	–	Power supply of digital system.
2	D_6	O	Digital output. (LSB)
3	D_5	O	Digital output.
4	D_4	O	Digital output.
5	D_3	O	Digital output.
6	D_2	O	Digital output.
7	D_1	O	Digital output. (MSB)
8	CLK	I	Clock input.
9	CLAMP PULSE	I	Clamp pulse input.
10	SV	–	Connected to ground.
11	SU	–	Color difference signal select (B – U) U
12	SV	–	Color difference signal select (R – Y) V
13	SY	–	Luminance signal select (Y)
14	DGND	–	Ground
15	AGND	–	Ground
16	Y_{IN}	I	Luminance signal input (Y)
17	V_{IN}	I	Color difference signal input (R – Y)
18	U_{IN}	I	Color difference signal input (B – Y)
19	V_{IN}	–	Unused
20	V_{MON}	–	Unused
21	V_{RT}	–	Reference voltage (for high voltage)
22	V_{RM}	–	Reference voltage (for medium voltage)
23	V_{RB}	–	Reference voltage (for low voltage)
24	AV_{CC}	–	Power supply of analog system.

IC DESCRIPTION – 2

IC, μ PD75212CW／μ PD7516CW

Pin No.	Pin Name	I／O	Description	Active
1	D	O	Anode and key matrix scan output signals of fluorescent display.	H
2	C	O		H
3	B	O		H
4	A	O		H
5	REEL FG	I	Receives a signal from the reel sensor in the deck. Reel pulse input for the tape counter. Counts by one digit when 4 pulses are input.	L
6	$\overline{REQ}$	I	Signal to request serial communications from the mechanism microprocessor.	L
7	$\overline{READY}$	I	Signal from the mechanism microprocessor which indicates that it is ready to accept serial communications.	L
8	SO	I	Signal to input serial data from the mechanism microprocessor.	H or L
9	REMOCON	I	Remote control data input.	L
10	SYNC DET	I	Detects the H.SYNC component in the tuner signal to discriminate whether a picture is present or not. "L" is input when a picture is present.	L
11	VCR	I	Selects the "VCR" indication in the fluorescent display. "H":indicate the VCR "L":not indicate the VCR	H
12	ROM DI	I	Serial data input signal from the E^2PROM.	H or L
13	ROM CLK	O	Outputs a timtng pulse to write and read data to/from the E^2PROM.	H or L
14	ROM DO	O	Serial data output signal to the E^2PROM	H or L
15	ROM CS	O	Signal to request serial communication to the E^2PROM	L
16	BUZZER	O	Buzzer drive output (approx. 2KHz)	H or L
17	$\overline{SCK}$	O	Output a timing pulse to write and read data to/from the mechanism microprocessor.	L
18	SI	O	Serial data output signal to the mechanism microprocessor.	H or L
19	$\overline{SYNC}$	O	Signal to synchronize serial communication with the mechanism microprocessor.	L
20	S MUTE	O	Mutes audio signals. Outputs "H" when a broadcast is not received.	H
21	KM0	I	Key matrix scan inputs	H
22	KM1	I		H
23	KM2	I		H
24	KM4	I		H
25	DELAY TIME	I	Delays the rise time of S MUTE. "H" : Delays the rise time. "L" : Normal.	H
26	AFT H	I	AFT voltage input. "L" is input when the AFT voltage becomes positive with respect to the reference value.	L
27	AFT L	I	AFT voltage input. "L" is input when the AFT voltage becomes negative with respect to the reference value.	L
28	———	–	Unused	–
29	PPO	O	Tuning voltage control output.	H or L
30	4. 19MHz	I	A ceramic oscillator which generates a main system clock signal (4.19MHz) is connected.	–
31	4. 19MHz	O		
32	GND	–	Ground	–
33	32. 768KHz	I	A crystal oscillator which generates a sub-system clock signal (32.768KHz) is connected.	–
34	32. 768KHz	O		
35	PAL LED	O	Outputs "H" when the video broadcast system is PAL.	H

Pin No.	Pin Name	I/O	Description	Active
36	MESECAM LED	O	Outputs "H" when the video broadcast system is MESECAM.	H
37	NTSC3.58	O	Outputs "H" when the video broadcast system is NTSC3.58.	H
38	NTSC4.43	O	Outputs "H" when the video broadcast system is NTSC4.43.	H
39	$\overline{RST}$	I	System reset input.	L
40	G10	O	Grid signals of th fluorescent	H
41	G9	O		H
42	G8	O		H
43	G7	O		H
44	G6	O		H
45	G5	O		H
46	G4	O		H
47	G3	O		H
48	G2	O		H
49	G1	O		H
50	K. MUTE	O	Mutes audio signal. Outputs "H" momentarily to erase switching noise when the tuner is operated.	H
51	AFT D	O	Turns the AFT of the circuit on and off. "H" : OFF "L" : ON	L
52	BAND1	O	Outputs to select the tuned band.	
53	BAND2	O		

BAND1	BAND2	BAND
L	L	L
L	H	H
H	L	U
H	H	X

X=(not output)

Pin No.	Pin Name	I/O	Description	Active
54	N. C	–	Unused	–
55	N. C	–	Unused	–
56	EVER−24V	–	Pull-down resistors of the FIP controller/driver are connected.	–
57	EVER−4V	–	Supplies power to the output buffer of the FIP controller/driver.	–
58	J	O	Anode signals of fluorescent display.	H
59	I	O		H
60	H	O	Anode and key matrix scan output signals of fluorescent display	H
61	G	O		H
62	F	O		H
63	E	O		H
64	EVER+5V	–	Positve power supply.	–

IC201, MB88515B

<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th><th>Active</th></tr>
<tr><td>1</td><td>TL−F</td><td>O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the tape threading motor.<table><tr><th>TL-F</th><th>TL-R</th><th>State</th></tr><tr><td>L</td><td>L</td><td>Stops</td></tr><tr><td>H</td><td>L</td><td>Rotates forward</td></tr><tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr><tr><td>H</td><td>H</td><td>Braking to stop</td></tr></table></td><td>H</td></tr>
<tr><td>2</td><td>TL−R</td><td>O</td><td>H</td></tr>
<tr><td>3</td><td>CM−F</td><td>O</td><td rowspan="2">Outputs to control the start/stop and direction of rotation of the capstan motor.<table><tr><th>CM-F</th><th>CM-R</th><th>State</th></tr><tr><td>L</td><td>L</td><td>Stops</td></tr><tr><td>H</td><td>L</td><td>Rotates forward</td></tr><tr><td>L</td><td>H</td><td>Rotates in reverse</td></tr><tr><td>H</td><td>H</td><td>Braking to stop</td></tr></table></td><td>H</td></tr>
<tr><td>4</td><td>CM−R</td><td>O</td><td>H</td></tr>
<tr><td>5</td><td>A MUTE</td><td>O</td><td>Muting of audio signals.
Outputs “H” during trick play. When switching between the recorded signal and EE signal, this pin outputs “H” for the specified period before and after the inversion of the EE output to eliminate switching noise.</td><td>H</td></tr>
<tr><td>6</td><td>FLASH</td><td>O</td><td>Not used.</td><td>H</td></tr>
<tr><td>7</td><td>V MUTE</td><td>O</td><td>Muting of video signals.
Outputs “H” when the power is turned off and “L” when it is turned on. When the power is switched from OFF to ON, however, this pin outputs “H” for the specified period to switch and then outputs “L”.</td><td>H</td></tr>
<tr><td>8</td><td>$\overline{\text{EE}}$</td><td>O</td><td>Switches the video output between the external input signal and tape playback signal.
“H”: Tape playback signal
“L”: External input signal</td><td>L</td></tr>
<tr><td>9</td><td>$\overline{\text{ACK}}$</td><td>O</td><td>Serial communication reception complete signal from the tracking microprocessor.
Outputs “H” during serial communication and “L” when reception is completed. Continues to output “H” when reception is not completed due to an error in reception, etc.</td><td>L</td></tr>
<tr><td>10</td><td>P−ON</td><td>O</td><td>Outputs “H” during power on to control the power circuit of the VCR.</td><td>H</td></tr>
<tr><td>11</td><td>PAL/$\overline{\text{NTSC}}$</td><td>O</td><td>Output to switch between PAL and NTSC video signals.
“H”: PAL
“L”: NTSC</td><td>—</td></tr>
<tr><td>12</td><td>TRKG RST</td><td>O</td><td>Tracking microprocessor reset signal.
Outputs a pulse to reset the tracking microprocessor.</td><td>H</td></tr>
<tr><td>13</td><td>PLAY</td><td>O</td><td>Outputs “H” during the PLAY, STILL, CUE, REV and S-ADV modes.</td><td>H</td></tr>
<tr><td>14</td><td>D−PAUSE</td><td>O</td><td>Outputs “H” during the STILL and S-ADV modes.</td><td>H</td></tr>
<tr><td>15</td><td>REC</td><td>O</td><td>Outputs “H” in the REC mode.
Outputs a 500ms pulse in the REC PAUSE mode.</td><td>H</td></tr>
<tr><td>16</td><td>REPEAT</td><td>O</td><td>Outputs “H” in the REPEAT mode.</td><td>H</td></tr>
<tr><td>17</td><td>D−REC</td><td>O</td><td>When switched from STOP to REC and from REC PAUSE to REC, etc. and the tape is running, this pin outputs “H” after the capstan speed is stabilized to record on the tape.</td><td>H</td></tr>
<tr><td>18</td><td>JOG</td><td>O</td><td>Outputs “H” during the CUE and REV modes.</td><td>H</td></tr>
</table>

Pin No.	Pin Name	I/O	Description	Active
19	D-PLAY	O	When switched from STOP to PLAY and from STOP to STILL, etc. and the tape is running, this pin outputs "H" to prevent the pictures from being distorted.	H
20	VCR/$\overline{\text{TV}}$	–	Not used.	–
21	PAL	O	Outputs "H" in the PAL mode.	H
22	MESECAM	O	Outputs "H" in the MESECAM mode.	H
23	NTSC3.58	O	Outputs "H" in the NTSC 3.58 mode.	H
24	NTSC4.43	O	Outputs "H" in the NTSC 4.43 mode.	H
25	EX	I	Connected to a clock oscillator (6MHz) which generates a system clock pulse.	–
26	X	O		
27	$\overline{\text{RST}}$	I	System reset input.	L
28	SO	–	Not used.	–
29	SI	–	Not used.	–
30	$\overline{\text{SCK}}$	–	Not used.	–
31	REMOCON	I	Remote control data input.	L
32	VSS	–	Connected to Ground.	–
33	S. CLK	O	Outputs a timing pulse to the servo IC to transfer serial data.	–
34	S. DATA	O	Transfers serial data to the servo IC.	–
35	$\overline{\text{REQ}}$	–	Not used.	–
36	$\overline{\text{READY}}$	–	Not used.	–
37	KI0	I	Key matrix scan inputs.	L
38	KI1	I		L
39	KI2	I		L
40	KI3	I		L
41	$\overline{\text{SYNC}}$	I	Signal to synchronize serial communications with the timer microprocessor.	L
42	$\overline{\text{VISS}}$	I	Detects a VISS signal.	L
43	AVSS	–	Connected to Ground.	–
44	AVR−	–	Connected to Ground.	–
45	AVR+	–	Positive power terminal, connected to SS5V.	–
46	AVCC	–	Positive power terminal, connected to SS5V.	–
47	D-STILL	O	Outputs "H" during STILL and STILL-ADVANCE.	H
48	$\overline{\text{LINE}}$/TUN(A)	O	Switches the audio input. "H": Tuner audio "L": Line audio	–
49	KO5	O	Key matrix scan output signals.	–
50	KO4	O		
51	KO3	O		
52	KO2	O		
53	KO1	O		
54	KO0	O		
55	TOP S.	I	Receives a tape start detection signal. Inhibits switching to the reverse direction. When this signal is input during reverse running, it shifts the VCR to the stop mode.	H
56	END S.	I	Receives a tape end detection signal. Inhibits switching to the forward direction. When this signal is input during forward running, it shifts the VCR to the auto rewind mode.	H
57	RF SWP.	I	Receives drum rotation pulses. When the output of pulses is stopped for 2 seconds during an operation mode in which the drum rotates due to an anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.	–

Pin No.	Pin Name	I/O	Description	Active
58	REEL S.	I	Receives a signal from the reel sensor in the mechanism. When the output of pulses is stopped for 2 seconds during an operation mode in which the reel rotates due to anomaly in tape, mechanism, etc., the VCR is switched off automatically to protect the tape.	–
59	(PULL UP)	–	Not used.	–
60	$\overline{C}\cdot\overline{START}$	I	Connected to a cassette start switch in the cassette loading mechanism to perform the cassette-in operation (loading). When this signal is detected during eject, the capstan motor is switched to be pulse driven.	L
61	$\overline{C}-\overline{IN}$	I	Connected to a cassette-in switch in the cassette loading mechanism to detect the cassette-in status.	L
62	$\overline{C}-\overline{OUT}$	I	Connected to a cassette-out switch in the cassette loading mechanism to detect the cassette-out (eject) status. Instructs to stop the cassette-out operation (unloading).	L
63	NC	–	Not used.	–
64	VCC	–	Positive power terminal, connected to SS5V.	–

IC, MB40778

Pin No.	Pin Name	I/O	Description
1	GND	–	Connected to ground.
2	VD	–	Power supply of digital system.
3	COMP	–	Phase compensation time constant.
4	VR	I	Reference voltage input.
5	VA	–	Power supply of analog system.
6	AO	O	Analog output.
7	NC	–	Unused.
8	VA	–	Power supply of analog system.
9	VD	–	Power supply of digital system.
10	GND	–	Connected to ground.
11	CK	I	D/A converter clock input.
12~19	Dn	I	Digital data inputs. D1(MSB), D8(LSB)
20	NC	–	Unused.

IC, MB40776

Pin No.	Pin Name	I/O	Description
1	VD	–	Power supply of digital system.
2	COMP	–	Phase compensation time constant.
3	VR	I	Reference voltage input.
4	VA	–	Power supply of analog system.
5	AO	O	Analog output.
6	VA	–	Power supply of analog system.
7	VD	–	Power supply of digital system.
8	GND	–	Connected to ground.
9	CK	I	D/A converter clock input.
10~15	D1~D6	I	Digital data inputs. D1(MSB), D6(LSB)
16	GND	–	Connected to ground.

IC, LH2464 – 10

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{OE}}$	I	Output enable input.
2	DQ1	I/O	Data I/O (LSB)
3	DQ2	I/O	Data I/O
4	$\overline{\text{WE}}$	I	Write enable input.
5	$\overline{\text{RAS}}$	I	$\overline{\text{RAS}}$ input.
6~8	A4~6	I	Address inputs.
9	VCC	–	Power supply pin.
10	A7	I	Address input. (MSB)
11~14	A0~3	I	Address inputs A0. (LSB)
15	DQ3	I/O	Data I/O
16	$\overline{\text{CAS}}$	I	$\overline{\text{CAS}}$ input.
17	DQ4	I/O	Data I/O (MSB)
18	VSS	–	Connected to ground.

IC, MB87813A

Pin No.	Pin Name	I/O	Description
1	RVD	–	Unused.
2	XTEST	–	Connected to VDD.
3	VDD	–	Power supply pin.
4	VSS	–	Connected to ground.
5	DIGXAT	–	Unused.
6	MUTE	–	Connected to ground.
7~14	DAYn	O	Y D/A converter data outputs. DAY7MSB), DAY0(LSB)
15	VSS	–	Connected to ground.
16	YDACK	O	Y D/A converter clock output. (550 fH)
17	CGIN	–	Connected to ground.
18,19	XRW,XRE	–	Connected to VDD.
20~27	AAn	O	Memory A address outputs. AA7 (MSB), AA0 (LSB)
28	VDD	–	Power supply pin.
29	VSS	–	Conncted to ground.
30	XACAS	O	Memory A $\overline{\text{CAS}}$ output.
31	XARAS	O	Memory A $\overline{\text{RAS}}$ output.
32	XCE	I	R50 input.
33	SDIN	I	W50 input.
34	SCK	–	Connected to ground.
35	DIKY	–	Connected to VDD.
36~39	MADn	I/O	Memory A data bus. MAD3 (MSB), MAD0 (LSB)
40	VSS	–	Connected to ground.
41~44	MBDn	I/O	Memory B data bus.
45	XAWE	O	Memory A write enable output.
46	XBWE	O	Memory B write enable output.
47	XRAMS	–	Connected to VDD.
48	PCSYNC	–	Connected to ground.
49	PDETV	–	Connected to ground.
50	XCLR	I	Reset input.
51	XBRAS	O	Memory B $\overline{\text{RAS}}$ output.
52	XBCAS	O	Memory B $\overline{\text{CAS}}$ output.

IC, MB87813A

Pin No.	Pin Name	I/O	Description
53	VDD	–	Power supply pin.
54	VSS	–	Connected to ground.
55~62	BAn	O	Memory B address outputs. BA7 (MSB),BA0 (LSB)
63	WF	I	Write enable input.
64	YCLK	I	System main clock input. (1100 fH)
65	VSS	–	Connected to ground.
66	ADCK	O	A/D converter clock output. (1100 fH)
67	WHD	O	Write system HD pulse output.
68	WOB	O	Wobbling clock output. (550 fH)
69	VSS	–	Connected to ground.
70~75	ADn	I	A/D converter data inputs. AD5 (MSB),AD0 (LSB)
76	PPALP	–	Connected to ground.
77	PENCK	–	Connected to ground.
78	VDD	–	Power supply pin.
79	VSS	–	Connected to ground.
80	PHER	O	AFC error pulse output.
81	SPER	–	Unused.
82	DEIV	I	VD input.
83	CSYNC	I	Composite sync input.
84	JOG	I	Jog mode control input.
85	CLAMP	O	Pedestal clamp pulse output.
86	SEL Y	O	Input multiplexer Y select pulse.
87	SEL U	O	Input multiplexer U select pulse.
88	CEL V	O	Input multiplexer V select pulse.
89	ENCCK	I	Digital encode clock input. (4 fsc)
90	VSS	–	Connected to ground.
91	CDACK	O	Chroma system D/A converter clock output. (4 fsc)
92	RUXV	–	Unused.
93~98	DACn	O	Chroma system D/A converter data outputs. DAC5 (MSB),DAC0 (LSB)
99	CBLK	–	Unused.
100	RND	–	Unused.

IC, M51271FP

Pin No.	Pin Name	I/O	Description
1	BGP	–	Burst gate pulse phase setting time constant.
2	BGW	I	Burst gate pulse width setting voltage input.
3	CO	O	ACC chroma output.
4	AGC	I	Color saturation control voltage input.
5	CI	I	Chroma input.
6	BC	–	Input bias capacity.
7	ACCF	–	ACC filter time constant.
8	VR	–	Reference voltage.
9	APCF	–	APC filter time constant.
10	XO	C	VCXO output.
11	TINT	I	Chroma phase control voltage input.
12	XI	I	VCXO input.
13	G	–	Connected to ground.
14	UIN	I	U – axis decoder input.
15	VCC	–	Power supply pin.
16	VIN	I	V – axis decoder input.
17	N/$\overline{P}$	O	NTSC/PAL switching.
18	FSC	O	Subcarrier output.
19	UO	O	U – axis decoder output.
20	VO	O	V – axis decoder output.
21	KFC	–	Killer filter capacity.
22	KPF	–	Killer reference filter capacity.
23	BLK	–	Connected to VCC.
24	HD	I	HD pulse input.
25	VIN	I	Y input.
26	FBC	–	Sync separator feedback capacity.
27	TH	I	Sync separator slice level input.
28	SYNC	O	Composite sync output.

CIRCUIT DESCRIPTION

Explanation of Digital Conversion Operation

The color system and number of lines/frames are different in the NTSC, PAL and MESECAM systems. To change the system, the color system and number of lines/frames are converted by the flow shown in Figure-1.

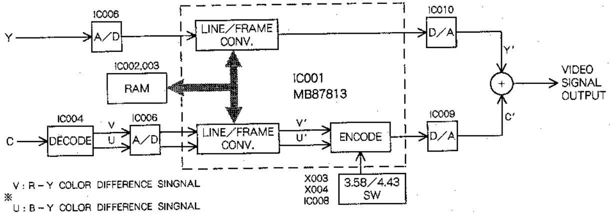

IC006
Y
A/D
LINE/FRAME CONV.
IC010
D/A
Y'
IC002,003
RAM
IC001
MB87813
+
VIDEO SIGNAL OUTPUT
IC004
V
IC006
C
DECODE
U
A/D
LINE/FRAME CONV.
V'
U'
ENCODE
IC009
D/A
C'
X003
X004
IC008
3.58/4.43 SW
V : R－Y COLOR DIFFERENCE SINGNAL
※
U : B－Y COLOR DIFFERENCE SINGNAL

Fig.-1 Block Diagram (DC－1 Circuit Board)

1. Line Frame Conversion

The number of lines/frames is converted by thinning or interpolating (reading twice) the lines using the field memory ICs (IC002, 003). When the horizontal frequency is the same, the number of lines and the number of frames are in inverse proportion. Since the horizontal frequency is almost the same in the PAL and NTSC systems, the number of lines is converted, thus the number of frames can also be converted.

(1) NTSC to PAL line/frame conversion

NTSC 525 lines are convertsd to PAL 625 lines by writing all lines of the input NTSC signal to the field memory (IC002, 003) as they are and reading the same line twice every 5 lines to increase the number of lines to 625.

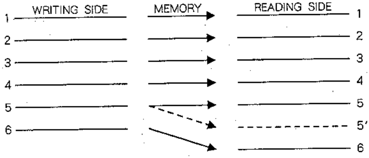

WRITING SIDE
MEMORY
READING SIDE
1
2
3
4
5
6
1
2
3
4
5
5'
6

Fig.-2 Increasing the Number of Lines

(2) PAL to NTSC line/frame conversion

PAL 625 lines are converted to NTSC 525 lines by reducing the lines of the input PAL signal at a rate of one line per 6 lines and writing them to the field memory.

The lines are read continuously to decrease the number to 525 lines.

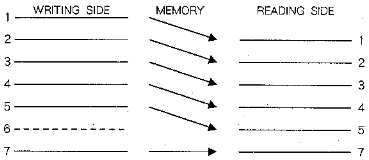


Fig.-3 Decreasing the Number of Lines

2. Color System Conversion

The subcarrier frequency is different between the 3.58/4.43 NTSC and PAL systems. Also the V-axis is inverted every 1H in the PAL system.

To convert the system, the chroma signal is once decoded by IC004 (M51271FP) according to the TV system of the output signal.

The color difference signals, U and V (the decoder outputs), are line-frame-converted and are then encoded according to the TV system.

3. Select Signal for System Conversion

The select signal is output by switching the SYSTEM SW and CONVERT OUT SW on the front panel to switch the input and output signal systems are switched as shown in Tables 1 and 2.

Input System Select Signal	PAL	MESECAM	3.58NTSE	4.43NTSC
NT3	L	L	H	L
NT4	L	L	L	H
MES/$\overline{\text{PAL}}$	L	H	H	H

Table 1

These select signals are passed through the logic circuit as shown in Figure-4 ; a select signal which is necessary for line/frame conversion and color system conversion is produced and supplied to each block.

Output System Select Signal	NTSC	THRU	PAL
$\overline{\text{DIG PAL}}$	H	H	L
$\overline{\text{DIG NT}}$	L	H	H

Table 2

Table 3 shows the relation between the input and output systems and select signals.

Input System Output System Select Signal	PAL			MESECAM			3.58NTSC			4.43NTSC		
	NTSC	THRU	PAL	NTSC	THRU	PAL	NTSC	THRU	PAL	NTSC	THRU	PAL
W 50	H	H	H	H	H	H	L	L	L	L	L	L
R 50	L	H	H	L	H	H	L	L	H	L	L	H
DEC 4	H	H	H	H	H	H	L	L	L	H	H	H
$\overline{\mathrm{NT}}$/PAL	H	H	H	H	H	H	L	L	L	L	L	L
IC 14① (4.43)	L	H	H	L	L	L	L	L	H	L	H	H
IC 17③ (3.58)	H	L	L	L	L	L	H	H	L	H	L	L
Bypass	L	H	H	L	H	H	H	H	L	L	H	L

Table 3

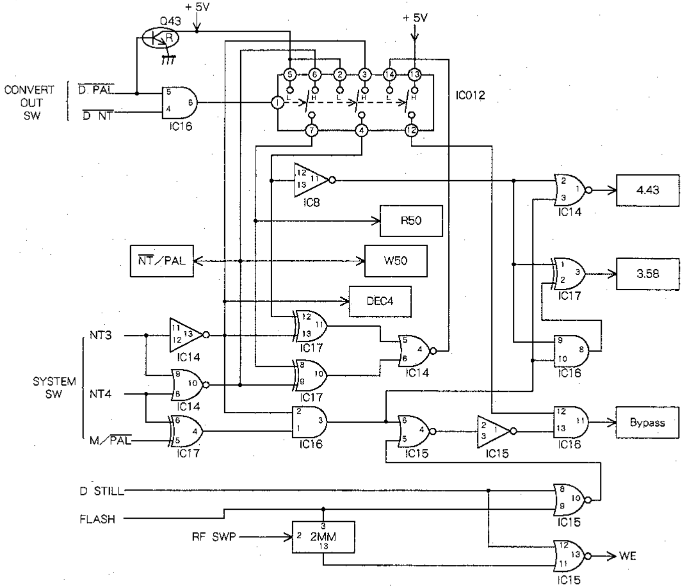
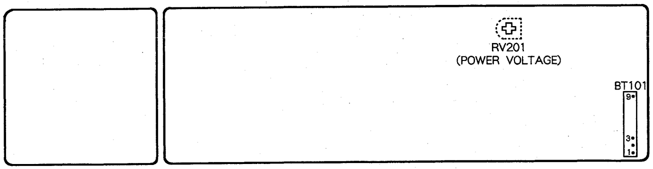

+5V
Q43
+5V
IC012
CONVERT OUT SW
D PAL
D NT
IC16
IC8
4.43
IC14
R50
NT/PAL
W50
3.58
IC17
DEC4
NT3
IC14
IC17
IC14
IC16
SYSTEM SW
NT4
IC14
IC17
M/PAL
IC17
IC16
IC15
IC15
IC16
Bypass
D STILL
FLASH
IC15
RF SWP
2MM
IC15
WE

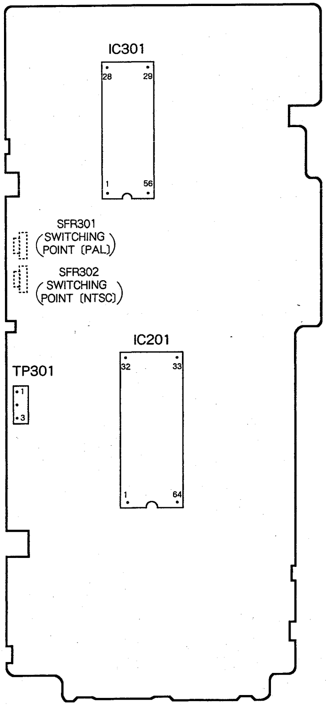
Fig. – 4

ELECTRICAL ADJUSTMENT

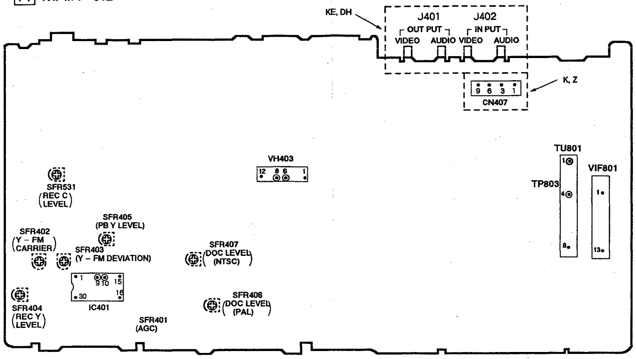
H POWER – 1 C.B I POWER – 2 C.B


RV201
(POWER VOLTAGE)
BT101
9
3
1

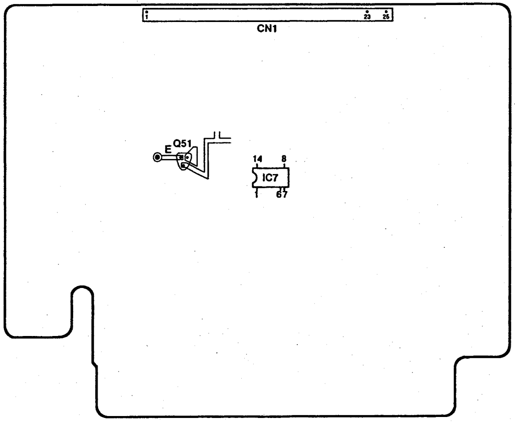
B SERVO／SYSCON C.B


IC301
28
29
1
56
SFR301
(SWITCHING POINT (PAL))
SFR302
(SWITCHING POINT (NTSC))
IC201
32
33
1
64
TP301
1
3

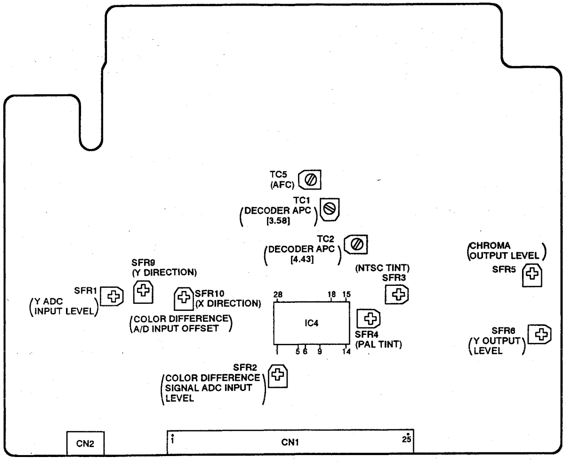
A MAIN C.B


KE, DH
J401
J402
OUT PUT
IN PUT
VIDEO
AUDIO
VIDEO
AUDIO
K, Z
9 6 3 1
CN407
TU801
1
4
8
TP803
VIF801
1
13
VH403
12 8 6 1
SFR531
(REC C LEVEL)
SFR405
(PB Y LEVEL)
SFR402
(Y – FM CARRIER)
SFR403
(Y – FM DEVIATION)
SFR407
(DOC LEVEL (NTSC))
1
9 10
15
30
16
IC401
SFR404
(REC Y LEVEL)
SFR401
(AGC)
SFR406
(DOC LEVEL (PAL))

D DIGITAL C.B (Bottom view)

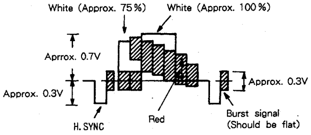

1
23 25
CN1
E
Q51
14 8
IC7
1 6 7

D DIGITAL C.B (Top view)

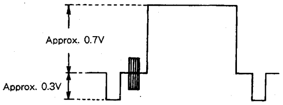

TC5
(AFC)
TC1
(DECODER APC [3.58])
TC2
(DECODER APC [4.43])
SFR9
(Y DIRECTION)
SFR1
(Y ADC INPUT LEVEL)
SFR10
(X DIRECTION)
(COLOR DIFFERENCE A/D INPUT OFFSET)
28
18
15
IC4
1
5 6
9
14
(NTSC TINT)
SFR3
SFR4
(PAL TINT)
(CHROMA OUTPUT LEVEL)
SFR5
SFR6
(Y OUTPUT LEVEL)
SFR2
(COLOR DIFFERENCE SIGNAL ADC INPUT LEVEL)
CN2
1
CN1
25

Set – up for Adjustment

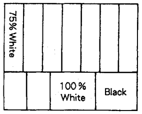
Since the video signal from the pattern generator is used for adjustment, the characteristics of this signal should be within the specificatis. Therefore, while observing the output waveform with a 75-ohm load, check that the amplitudes of the sync signal, video component and the burst signal are approx. 0.3V, 0.7V and 0.3V, and the burst amplitude is flat. Also check that the ratio in level between the burst and red signals is 0.30 : 0.66. If these values are not satisfied with the video output signal, the pattern generator should be calibrated. (Refer to the instruction manual of the pattern generator.)


White (Approx. 75 %)
White (Approx. 100 %)
Aprrox. 0.7V
Approx. 0.3V
Approx. 0.3V
H. SYNC
Red
Burst signal
(Should be flat)

Color bar signal of the patttern generator

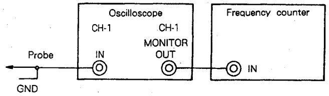

Approx. 0.7V
Approx. 0.3V

Color bar signal of all white raster


75% White
100 %
White
Black

TV Screen

Connection method of the measurements


Oscilloscope
CH-1
CH-1
IN
MONITOR
OUT
Probe
GND
Frequency counter
IN

When the signals in parentheses [ ] are used, the adjustment values should also be set to those in parentheses [ ].

1. Power Voltage Adjustment ($\boxed{\text{I}}$ POWER-2 C.B)

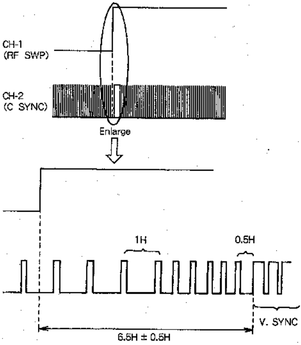
1) Connect a digital tester between BT101 pin ④ and pin ② (GND) on the POWER-2 C.B.
2) Adjust RV201 on the POWER-2 C.B so that the voltage is 12.2 ± 0.3V.

Servo Circuit Adjustment

2. Switching Point Adjustment ($\boxed{\text{B}}$ SERVO/SYSCON C.B)

Oscilloscope : CH-1 : TP301 pin ② (RF SWP)
CH-2 : TP301 pin ③ (C SYNC)

1) SET the AUTO TRACKING switch to OFF and set the manual tracking to the center.
※ Load or unload a cassette or change over the SYSTEM switch to reset the tracking to the center.
2) Set the SYSTEM switch.
   PAL : Set to PAL.
   NTSC : Set to NTSC 3.58
   Set the CONV switch to THRU.
3) Playback alignment tape.
   PAL : TTV-P1
   NTSC : TTV-N1
4) Adjust to the following specification.
   PAL : SFR301
   NTSC : SFR302
* Be sure adjust PAL first

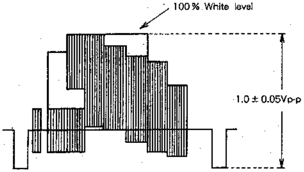


Video Circuit Adjustment

3. PB Y Level Adjustment ($\boxed{\text{A}}$ MAIN C.B)

Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback TTV-P1 [TTV-N1] and adjust SFR405 so that the waveform is as shown in the figure below.
* Connect a monitor VIDEO OUT or terminate VIDEO OUT with 75-ohm.



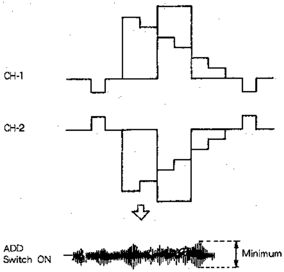
3) Set the SYSTEM switch to NTSC 3.58 [PAL].
4) Playback TTV-N1 [TTV-P1] and check that the level is within the specification.

Specification : The 100% white level is 1.0V ± 0.05Vp-p.

4. DOC Level (PAL) Adjustament ($\boxed{\text{A}}$ MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨
CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-P1.
2) Set the SYSTEM switch to PAL.
3) Turn the oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR406 so that the waveform becomes minimum as shown in the figure.
※ Leave the oscilloscope power range the same as that of the CH-1 and CH-2 range.



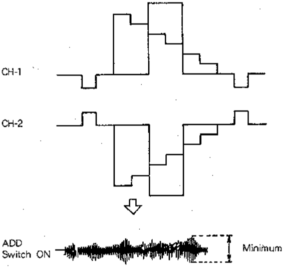
5. DOC Level (NTSC) Adjustment (A MAIN C.B)

Oscilloscope : CH-1 : IC401 pin ⑨

CH-2 : IC401 pin ⑩

1) Playback the test tape TTV-N1.
2) Set the SYSTEM switch to NTSC 3.58.
3) Turn the oscilloscope CH-2 INV switch on.
4) Turn the oscilloscope VERT MODE ADD switch on.
5) Adjust SFR407 so that the waveform becomes minimum as shown in the figure.

※ Leave the oscilloscope power range the same as that of athe CH-1 and CH-2 range.



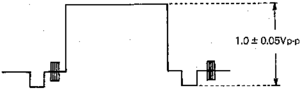
6. AGC Adjustment (A MAIN C.B)

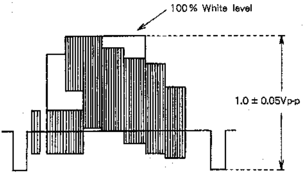
Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Apply a PAL [NTSC 3.58] color bar signal (with 100% white) to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR401 so that the specification in the figure below is satisfied in the E-E mode. 1.0V ± 0.05Vp-p.

* Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75-ohm.

4) Apply an NTSC 3.58 [PAL] color bar signal (with 100% white) to VIDEO IN.
5) Check that the specification shown in the figure below is satisfieid in the E-E mode. 1.0V ± 0.05Vp-p.





7. Y-FM Carrier Adjustment (A MAIN C.B)

Oscilloscope : VH403 (HV403) pin ⑥

1) Set VIDEO IN to the no signal input state (no equipment is connected). Set the SYSTEM switch to NTSC 3.58 and CONV switch to THRU.
2) Adjust SFR402 so that the reading of the frequency counter is within the specification in the E-E mode.
   Specification : 3.4MHz ± 0.05MHz
3) Set the SYSTEM switch to PAL.
4) Check that the frequency is within the specification in the E-E mode.
   Specification : 3.8MHz ± 0.05MHz

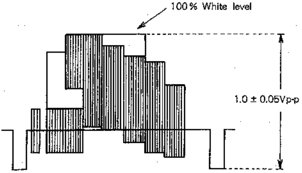
8. Y-FM Deviation Adjustment (A MAIN C.B)

Oscilloscope : VIDEO OUT (J402, CN407 pin ⑥)

1) Apply a PAL [NTSC 3.58] color bar signal (with 100% white) to LINE IN and record it. Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
2) Playback the recorded section and check that the level is within the specification as shown below.
3) If the level is out of the specificatin, adjust SFR403.
4) Repeat steps 1) and 2) so that the level is within the specification.

* Connect a monitor to VIDEO OUT or terminate VIDEO OUT with 75 Ω.

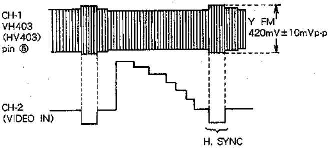
* The Y-FM carrier should have already been adjusted before this adjustment.



9. REC Y Level Adjustment (A MAIN C.B)

Oscilloscope : CH-1 : VH403 (HV403) pin ⑥
CH-2 : VIDEO IN (J401)

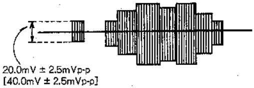
1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR404 so that the SYNC tip level is as shown in the figure in the E-E mode.


CH-1
VH403
(HV403)
pin ⑥
Y FM
420mV±10mVp-p
CH-2
(VIDEO IN)
H. SYNC

10. REC C Level Adjustment (A MAIN C.B)

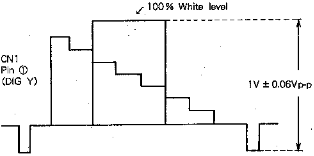
Oscilloscope : CH-1 :VH403 (HV403) pin ⑧
CH-2 : VIDEO IN (J401)

1) Apply a PAL [NTSC 3.58] color bar signal to VIDEO IN.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and CONV switch to THRU.
3) Adjust SFR531 so that the color burst level is 20.0mV ± 2.5mVp-p [40.0mV ± 2.5mVp-p] as shown in the figure in the E-E mode.

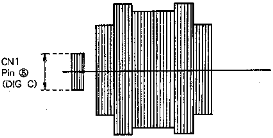

20.0mV ± 2.5mVp-p
[40.0mV ± 2.5mVp-p]

Digital Converter Circuit Adjustment

※ VIDEO circuit board adjustment should have already been adjusted before this adjustment
※ Check that the level is within the specificatin shown in the figure below is satisfied.


100% White level
CN1
Pin ①
(DIG Y)
1V ± 0.06Vp-p

SYNC tip~100% white level 1Vp-p. (at input NTSC3.58)


CN1
Pin ⑤
(DIG C)

Burst level : 286 ± 10mVp-p. (at input NTSC3.58)
300 ± 10mVp-p. (at input PAL)

11. AFC Adjustment (D DIGITAL C.B)

Digital voltmeter : IC7 pin ⑥ (AFC ER)

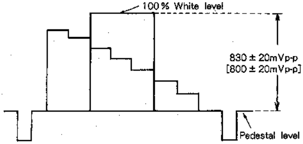
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust TC5 so the following specification values are satisfied in the E-E mode.

HV-MG350S K
HV-MG330S DH, KE } ···1.9V ± 0.1V
HV-MG350S Z ···2.2V ± 0.1V [2.0V ± 0.1V]

12. Y ADC Input Level Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Oscilloscope : C6 + terinal (AD Y)

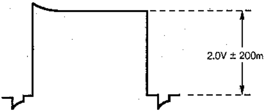
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR1 so that the level at the C6 ⊕ (AD Y) is as shown below in the E-E mode.

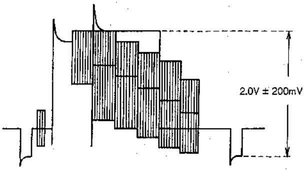


13. Y Output Level Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Oscilloscope : CN1 pin ㉓ (DIG V)

1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR6 so that the level at CN1 pin ㉓ is as shown in the diagram below.

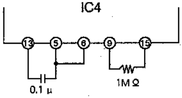




14. Decoder APC Adjustmen (3.58 MODE) ($\boxed{\text{D}}$ DIGITAL C.B)

Frequency counter : IC4 pin ⑱ (FSC)

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Connect a wire between IC4 pin ⑤ and pin ⑥, and a 0.1 μF capacitor between IC4 pin ⑤ and CN1 pin ⑬ (REG GND), and a 1M ohm resistor between IC4 pin ⑨ and pin ⑮ (REG 5V).
4) Adjust TC1 so that the frequency counter reads 3.579750MHz ± 50Hz.
5) Disconnect the capacitor and resistor and check that the frequency counter reads 3.579545MHz ± 5Hz or the frequency matches fsc (J401) from the pattern generator.



15. Decoder APC Adjustment (4.43MODE) ($\boxed{\text{D}}$ DIGITAL C.B)

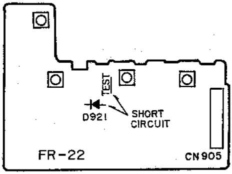
Frequency counter : IC4 pin ⑱ (FSC)

1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM swich to PAL.
3) Connect a wire and a 0.1 μF capacitor and a 1M ohm resistor in the same way as in Decoder APC Adjustment (3.58 MODE).
4) Adjust TC2 so that the frequency counter reads 4.434000MHz ± 50Hz.
5) Disconnect the capacitor and resistor and check that the frequency counter reads 4.43619MHz ± 1Hz or the frequency maches fsc (J401) from the pattern generator.

SERVICE MODES

1. Starting the service mode

1) After turning the power on, use tweezers, etc. to short the jumper and D921 (anode) as shown below.


TEST
D921
SHORT CIRCUIT
FR-22
CN905

* If the power is turned on with the jumper and D921 shorted, no key input is accepted.

2) After the service mode is started, the service mode changes from 1 to 2, 3 and back to 1 each time the TEST key is pressed.

- Displays the service mode number at the 8 grid sections of the FL display.

2. Releasing the service mode

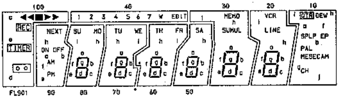
The service mode can be released by unplugging and plugging the power cord.

3. Details of service modes

1) Service mode 1

a) Displays the following statuses in the FL display.
Machine down
Mechanism error
Mechanism operation mode
Key input code (remote control input code)

b) Details of FL display
Displays the statuses in the unit at the 6 grid sections of the FL display.


10G
4G
3G
2G
1G
REC
TIMER
NEXT
ON OFF
AM
PM
1 2 3 4 5 6 7 W EDIT
SU MO
TU WE
TH FR
SA
MEMO
SUMUL
VCR
LINE
QTR DEW
SPLP EP
PAL
MESECAM
CH
FL901
9G
8G
7G
6G
5G

The mechanism error state is displayed by the system LEDs and G7 in the FL display.

LED / Error	PAL	MESECAM	NTSC 3.58	NTSC 4.43L
Loading	1	0	0	0
Unloading	0	1	0	0
Sledding	1	1	0	0
Unthreding	0	0	1	0
Mechanism intialized	1	0	1	0
Leader tape treatment	0	1	1	0
RF SWP	1	1	1	0
REEL	0	0	0	1
Mechanism position	1	0	0	1
Normal	0	0	0	0

1 : LED lights
0 : LES off

Display section	Display	Details
G2	※2	key input
G3	※2	Key input
G5	※1	Mechanism operation mode
G6	0	Normal
	1	Tape end
	2	Tape top
	3	Tape top/end
G7	0	Normal
	1	Loading error
	2	Unloading error
	3	Sledding error
	4	Unsledding error
	5	Mechanism initialization error
	6	Leader tape processing error
	7	RF SWP error
	8	REEL error
G8	1	Service Mode 1
	2	Service Mode 2
	3	Service Mode 3

Details of display sections G2 and G3.

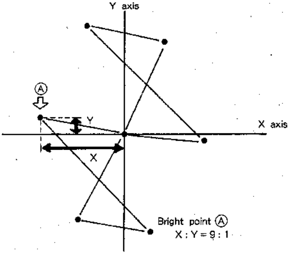
Key name	Code	Key name	Code	Key name	Code
		TIME SET	11	1	21
STOP	02	CLEAR	12	2	22
EJECT	03	NEXT	13	3	23
POWER	04	PRGM/ CHECK	14	4	24
PAUSE	05	10	15	5	25
PLAY	06	1	16	6	26
REW	07	CH DOWN	17	7	27
F. FWD	08	CH UP	18	8	28
TIMER REC	09	BAND	19	9	29
QTR	0A	TUNNING −	1A	0	2A
REPEAT	0B	TUNNING +	1B		
REC	0C	AUTO/ MANUAL	1C	CH	2C
CLOCK/ COUNTER	0D	SYSTEM	1D		
INPUT	0E	PRESET	1E		
COUNTER MEMO	0F	TEST	1F		
COUNTER RESET	10	TV/VCR	20		

16. NTSC Tint Adjustment (D DIGITAL C.B)

Oscilloscope : CH-1 : C42⊕ terminal (AD U)
CH-2 : C39⊕ terminal (AD V)

※ Set the oscilloscope to the X-Y indication and 100mV range.

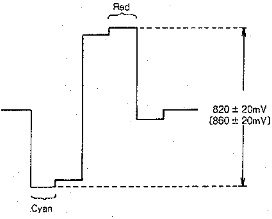
1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58.
3) Adjust SFR3 so that the level at point Ⓐ becomes as shown in the figure below.


Y axis
Ⓐ
Y
X axis
X
Bright point Ⓐ
X : Y = 9 : 1

17. Color Difference Signal ADC Input Level Adjustment (D DIGITAL C.B)

Oscilloscope : C39⊕ terminal (AD V)

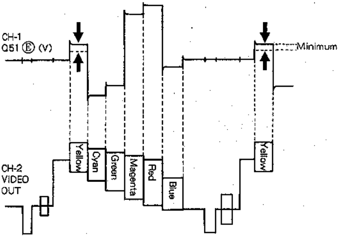
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL [NTSC 3.58].
3) Adjust SFR2 so that the amplitude from cyan to red of the waveform is as shown in the figure below.


Red
820 ± 20mV
[860 ± 20mV]
Cyan

18. PAL Tint Adjustment (D DIGITAL C.B)

Oscilloscope : CH-1 : Q51 Ⓔ (V)
CH-2 : VIDEO OUT

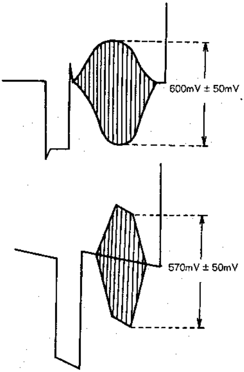
1) Apply a PAL color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to PAL.
3) Adjust SFR4 so the variation in the yellow is minimum sa shown in the figure below.


CH-1
Q51 Ⓔ (V)
Minimum
CH-2
VIDEO
OUT
Yellow
Cyan
Green
Magenta
Red
Blue
Yellow

19. Chroma Output Level Adjustment (D DIGITAL C.B)

Oscilloscope : CN1 pin ㉓ (DIG V)

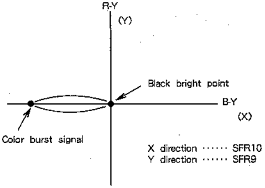
1) Apply a PAL [NTSC 3.58] color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to a PAL [NTSC 3.58] and the CONV switch to NTSC [PAL].
3) Adjust SFR5 so that the color burst level is 600mV ± 50mV [570 ± 50mV].


600mV ± 50mV
570mV ± 50mV

20-1. Color Difference A/D Input Offset Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Vectorscope (PAL) : VIDEO OUT

1) Apply an NTSC 3.58 color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58 and the CONV switch to PAL.
3) Set the gain of the vectorscope to maximum and adjust SFR9 and SFR10 so that the black bright point comes to the center of the X-Y axis.

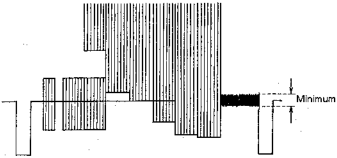

R-Y
(Y)
Black bright point
B-Y
(X)
Color burst signal
X direction …… SFR10
Y direction …… SFR9

20-2. Color-Difference A/D Input Offset Adjustment ($\boxed{\text{D}}$ DIGITAL C.B)

Simplified adjustment

Oscilloscope : CN1 pin ㉓ (DIG V)

1) Apply an NTSC 3.58MHz color bar signal to the VIDEO IN jack.
2) Set the SYSTEM switch to NTSC 3.58 and the CONV switch to PAL.
3) Adjust SFR9 and SFR10 so that the carrier is minimum in the black level as shown in the figure below.



Details of display section G5.

Display section	Display	Details
G5	0	EJECT (POWER OFF)
	1	STOP (POWER OFF)
	2	EJECT
	3	STOP (tape unsledding)
	4	STAND BY
	5	FF
	6	REW
	7	PLAY
	8	CUE
	9	REV
	A	STILL
	B	STILL ADV.
	C	REC
	D	REC PAUSE
	E	FWD. SEARCH
	F	REV. SEARCH

2) Service mode 2
Disables the following sensor inputs.
ICMB88515B

TOP SENSOR	55 Pin
END SENSOR	56 Pin
RF SWP	57 Pin
REEL SENSOR	58 Pin

3) Service mode 3
Set thee clock count speed to 60 times.

PRACTICAL SERVICE FIGURE

Output Level

Video (Impedance) : 1.0 ± 0.2Vp – p
(75 Ω ± 20 %, Unbalance)

Audio (Impedance) : – 8 ± 3dB (Less then 3.3k Ω)

RF Modulated (Impedance) : KE, DH
75 ± 3dB μ V (75 Ω, Unbalance)
K, Z
73 ± 3dB μ V (75 Ω, Unbalance)

Input Level

Video (Impedance) : 0.5V~2.0V ± 0.5Vp – p
(75 Ω ± 20 %, Unbalance)

Audio (Impedance) : – 8 ± 3dB (More than 47k Ω)

TV channels received

KE, DH

Destination	VHF Low	VHF High	UHF	Signal format	
				VHF	UHF
KE	E2	E12	–	B	G
				VIF 38.0MHz, SIF 32.5MHz	
	R1~R5	R6~R11	C13~C57	D	K
				VIF 38.0MHz, SIF 31.5MHz	
DH	C1~C5	C6~C12	C13~C57	D	K
				VIF 38.0MHz, SIF 31.5MHz	
	E2~E4	E5~E12	E21~E69	I	I
				VIF 38.0MHz, SIF 31.5MHz	

K, Z

Destination	VHF Low	VHF High	UHF	Signal format	
				VHF	UHF
K	1A~S1	S2 – W (S20)	S21~US83	B	G
				VIF 38.9MHz, SIF 33.4MHz	
				D	K
				VIF 38.9MHz, SIF 32.9MHz	
				I	I
				VIF 38.9MHz, SIF 32.4MHz	
Z	E2~E4 (E2~S2)	E5~E12 (S3~S20)	E21~E69 (S21~S41)	B	G
				VIF 38.9MHz, SIF 33.4MHz	
	R1~R5 C1~C5	R6~R12 C6~C12	C13~C57	D	K
				VIF 38.9MHz, SIF 32.9MHz	
	A – C (A – C)	D – J (C2 – J)	E21~E69	I	I
				VIF 38.9MHz, SIF 32.4MHz	

S/N Ratio

Video (SP mode) : [Test tape MVP – 08 (PB),
MVP – 09 (PB),
TDK HS – 120 (R/P)]

Signal	PB	R/P
Y-signal	More than 42dB	More than 40dB
Chrominance-Signal (AM)	More than 38dB	More than 38dB
Chrominance-Signal (PM)	More than 36dB	More than 36dB

Audio (SP mode) : More than 40dB

Audio Frequency Response :200Hz~6kHz (± 4dB)
(SP mode, Test tape A – BEX TPV – 160S)

Horizontal Resolution : More than 230 Lines
(Test tape TTV – 06T) (PAL, R/P)
More than 230 Lines
(MESECAM, R/P)
More than 220 Lines
(NSTC, PB, R/P)

Erase Ratio : More than 55dB

Bias Frequency : 70kHz ± 10 %

Tape speed : 23.39mm/sec ± 0.5 %
(SP mode) (PAL/MESECAM)
33.35mm/sec ± 0.5 % (NTSC)

Wow & Flutter : Less than 0.4 %
(Test tape TTV – P5, CCIR WTD)

F.F time : 270 ± 30sec (HS T-120)

REW time : 270 ± 30sec (HS T-120)

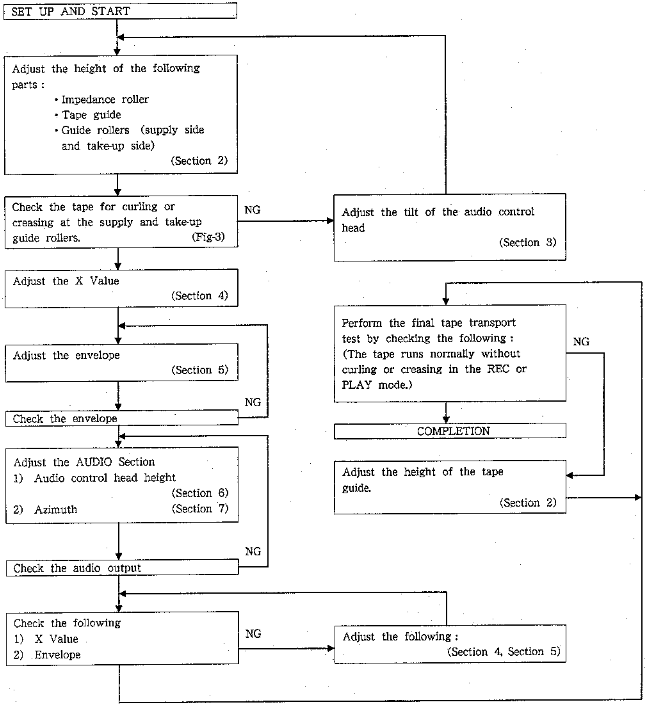
Back tension : KE, DH
37.5~57.5g-cm
Z, K
34.5~58.5g-cm

Loading : Less than 3sec

Unloading : Less than 3.5sec

MECHANICAL ADJUSTMENT

1. TAPE TRANSPORT ADJUSTMENT FLOWCHART


SET UP AND START
Adjust the height of the following parts :
• Impedance roller
• Tape guide
• Guide rollers (supply side and take-up side)
(Section 2)
Check the tape for curling or creasing at the supply and take-up guide rollers.
(Fig-3)
NG
Adjust the tilt of the audio control head
(Section 3)
Adjust the X Value
(Section 4)
Adjust the envelope
(Section 5)
NG
Check the envelope
Adjust the AUDIO Section
1) Audio control head height
(Section 6)
2) Azimuth
(Section 7)
NG
Check the audio output
Check the following
1) X Value
2) Envelope
NG
Adjust the following :
(Section 4, Section 5)
Perform the final tape transport test by checking the following :
(The tape runs normally without curling or creasing in the REC or PLAY mode.)
NG
COMPLETION
Adjust the height of the tape guide.
(Section 2)

2. TAPE RUNNING POSITION ADJUSTMENT

(GUIDE ROLLER/TAPE GUIDE/IMPEDANCE ROLLER)

Set – up

Use the J-9 and lift the "Main circuit board". (See the SERVICE JIG AND TOOLS)

1. Perform the height adjustment for the following items to obtain the proper tape running position. (See Figure – 1)
   - ① Impedance roller
   - ② Guide roller (Supply side)
   - ③ Guide roller (Take – up side)
   - ④ Tape guide

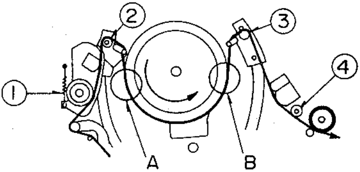


Fig. – 1

2. Load a blank tape and set VCR to the PLAY mode. Check the tape transport at points "A" and "B" as shown in Figure – 1.

3. Operate the VCR between the PLAY and STOP modes several times.

4. Observe the tape transport at the "Lead surface of the cylinder" during the PLAY mode, and confirm that the tape runs smoothly along the "Lead surface of the cylinder" without slipping downward or upward. (See Figure – 2)

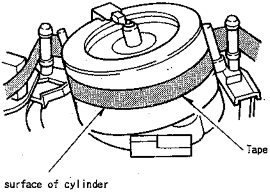


Fig. – 2

5. During loading, play and unloading, observe the tape at the supply and take-up "Guide rollers", "Tape guide" and "Impedance roller". Confirm that there is no curling or creasing etc., as shown in Figure-3.

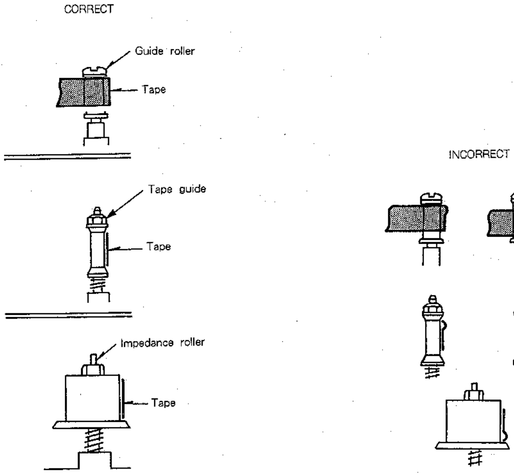

CORRECT
Guide roller
Tape
Tape guide
Tape
Impedance roller
Tape
INCORRECT

Fig.-3

6. If any curling or creasing is noted, adjust "Tape guide roller" and "Impedance roller" first. In this case, adjust the "Impedance roller" in both PLAY and REV modes so that the tape runs as shown in Figure-4.

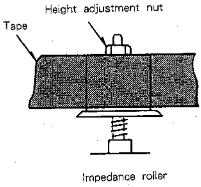

Height adjustment nut
Tape
Impedance roller

Fig.-4

7. Next, adjust the "Guide roller" height. Insert the adjustment driver (J – 2) into the "Guide roller" top. (See Figure – 5)
   Adjust the height by turning the driver slightly so that the tape runs on the "Guide roller" as shown in Figure – 3, and the lower edge of the tape runs along the "Lead surface of the cylinder".

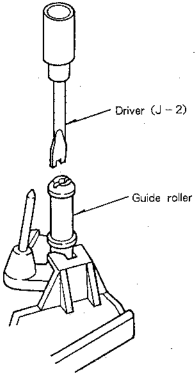


Fig. – 5

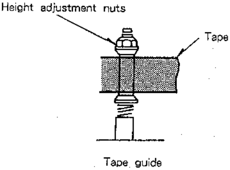


Fig. – 6

8. After completion of the supply side "Guide roller" adjustments, adjust "Tape guide" so that tape runs as shown in Figure – 6 and adjust the take – up side "Guide roller" by using the same procedures as for the supply side adjustments.
   In this case, adjust the "Guide roller" height first.

9. Confirm that there is no curling or creasing at the "Impedance roller" (Both PLAY and REV modes). If there is any curling or creasing at the "Impedance roller", adjust the same procedures of Figure – 6.

10. Finally, confirm that there is no curling or creasing at the take – up side guide roller and tape guide. If there is any curling or creasing between the take – up side "Guide roller" and the "ACE head", adjust the "ACE head".

3. AUDIO CONTROL HEAD ADJUSTMENT

1. Load a recorded tape and set the it to PLAY mode.

2. Adjust the height of the edge of the "Audio track" on the "Audio control head" by using the height adjustment nut Ⓐ and the "Tilt adjustment screw Ⓒ" so that the tape transport is smooth at the "Take - up guide pole". Align the "Audio control head" height. (See Figure - 7)

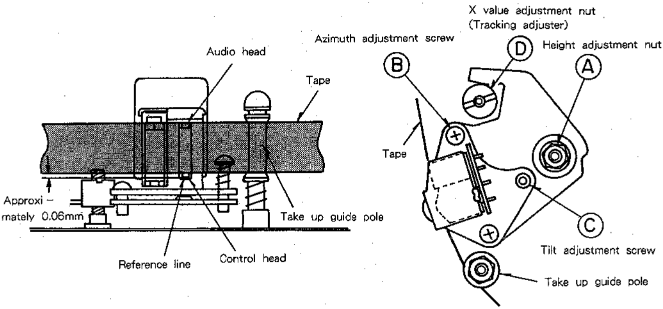

X value adjustment nut
(Tracking adjuster)
Azimuth adjustment screw
Ⓓ
Height adjustment nut
Audio head
Ⓑ
Ⓐ
Tape
Tape
Approxi - mately 0.06mm
Take up guide pole
Ⓒ
Tilt adjustment screw
Reference line
Control head
Take up guide pole

Fig. - 7

3. The fine adjustment is not required at this time.
   The following conditions as sufficient :
   (a) Proper tape transport between the "Audio control head" and the "Take - up guide pole".
   (b) Stable SERVO system operation (proper pickup of tape's recorded control signal).

4. X VALUE ADJUSTMENT (PB FM PEAK ADJUSTMENT)

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
MAIN C. B VH403 9 pin (PB Y FM) SERVO C. B TP301 2 pin (RF SWP)	Oscilloscope	PLAY (SP) MODE Test tape TTV-P2L or TTV – N2E

ADJ. Location	ADJ. Value
X value adjustment nut	Maximum level (CH1 PB Y FM signal)

TEST EQUIPMENT CONNECTING DIAGRAMS

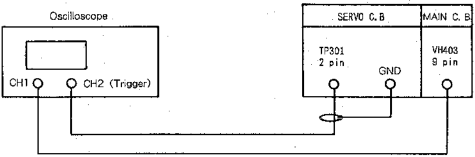

Oscilloscope
CH1
CH2 (Trigger)
SERVO C. B
MAIN C. B
TP301
2 pin
GND
VH403
9 pin

Fig. – 8

1. Connect the equipment as shown in Figure – 8.

2. Set the auto tracking switch to off and the manual tracking to the center.
* The manual tracking is set to the center when a cassette is loaded or ejected or the SYSTEM switch is changed over.

3. Adjust the "X value adjustment nut Ⓓ" for maximum PB FM Signal for CH1 by using TTV – P2L or TTV – N2E test tape. (See Figure – 9)

4. After adjusting the "X value", check that the output level of the PB FM signal for CH1 changes symmetrically by tracking switch.

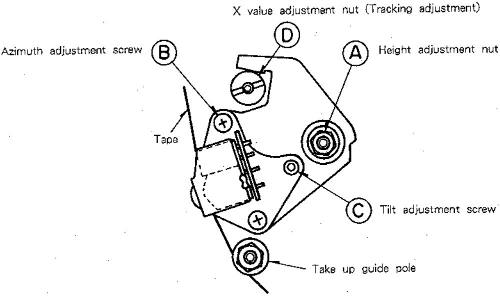

X value adjustment nut (Tracking adjustment)
D
Azimuth adjustment screw
B
A
Height adjustment nut
Tape
C
Tilt adjustment screw
Take up guide pole

Fig. – 9

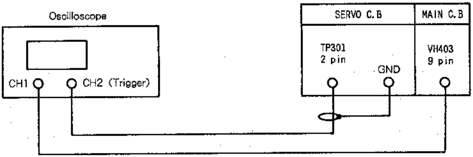
5. ENVELOPE WAVEFORM ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
MAIN C. B VH403 9 pin (PB Y FM) SERVO C. B TP301 2 pin (RF SWP)	Oscilloscope	PLAY (SP) MODE Test tape TTV-P2L or TTV-N2E

ADJ. Location	ADJ. Value
Guide rollers	Maximum level and correct wave form (PB Y FM signal)

TEST EQUIPMENT CONNECTING DIAGRAMS



1. Connect equipment as shown in Figure – 10.

2. Playback the test tape TTV – P2L or TTV-N2E.

3. The envelope waveform can be performed by adjusting the height of both the supply side and take – up side "Guide rollers". Finaly adjust the height of "Guide rollers" so that the envelope waveform is as flat as possible.

4. Manual tracking to its center position and confirm that a nearly maximum level is obtained.
   Then push the Tracking SW in both directions while adjusting the height of "Guide rollers", in order to obtain the envelope waveform which is as flat as possible.
   If the tape is above or lower the helical tape position, the envelope waveform will take the shape as shown in Figure – 11 and Figure – 12.

5. Adjust for maximum flatness of the envelope waveform according to the Figure – 11 and Figure – 12.

6. After adjustment, variable in the + or – tracking, and check that the waveform changes symmetrically.

7. Check the tape curl. (Refer to Section 2)

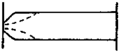
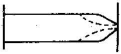
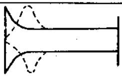
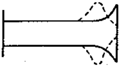
	Tape is too high	
	Supply side	Take-up side
When the tracking volume is variable in the + and − directions.		
		
Adjustment	Supply side "Guide roller" variable in the + direction (lowers "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the + direction (lowers "Guide roller") to flatten envelope.

Fig.-11

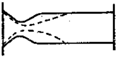
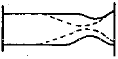
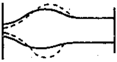
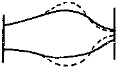
	Tape is too low	
	Supply side	Take-up side
When the tracking volume is variable in the + and − direction.		
		
Adjustment	Supply side "Guide roller" variable in the − direction (raises "Guide roller") to flatten envelope.	Take-up side "Guide roller" variable in the − direction (raises "Guide roller") to flatten envelope.

Fig.-12

6. AUDIO CONTROL HEAD HEIGHT/AUDIO CONTROL HEAD TILT ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT (J401, CN407 pin ①)	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV-P1 or TTV-N1

ADJ. Location	ADJ. Value
Height adjustment nut Azimuth adjustment screw	Maximum level (AC voltmeter)
Tilt adjustment screw	

TEST EQUIPMENT CONNECTING DIAGRAMS

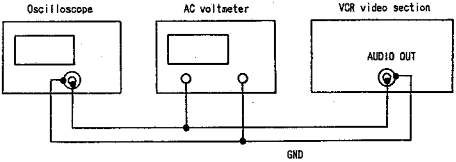


Fig. - 13

1. Connect the equipment as shown in Figure - 13.

2. Confirm that the running between the "Take - up guide roller" and the "ACE head" has no slack. If the tape has slack, take it up by turning the "Tilt adjustment screw ⓒ". (See Figure - 15)
   Then readjust "Guide roller" height in section 2 and the "X value" in section 4.

3. After confirming on the oscilloscope that a 1kHz audio signal is being output by playing back TTV - P1 or TTV - N1 test tape, adjust the "Height adjustment nut Ⓐ" so that the AC voltmeter's reading is brought to its maximum level. (See Figure - 7)

4. Adjust the "Azimuth adjustment screw Ⓑ" so that the AC voltmeter's reading is brought to its maximum level. (See Figure - 7)

7. AUDIO CONTROL HEAD AZIMUTH ADJUSTMENT

MEASURING METHOD

Measuring Point	Measuring Equip.	ADJ. Condition
AUDIO OUTPUT (J401, CN407 pin ①)	Oscilloscope AC voltmeter	PLAY (SP) MODE Test tape TTV – P2 or TTV-N2

ADJ. Location	ADJ. Value
Azimuth adjustment screw	Maximum level (AC voltmeter)

Fig.-14

TEST EQUIPMENT CONNECTING DIAGRAMS

Connect equipment as shown in Figure – 13.

1. After confirming on the oscilloscope that a 6kHz audio signal is being output by playing back TTV – P2 or TTV – N2 test tape, adjust the "Azimuth adjustment screw Ⓑ" so that the AC voltmeter's reading or oscilloscope waveform is brought to its maximum level. (See Figure – 15)

Note : Fix the screw Ⓑ and Ⓒ with lock paint after readjustment.

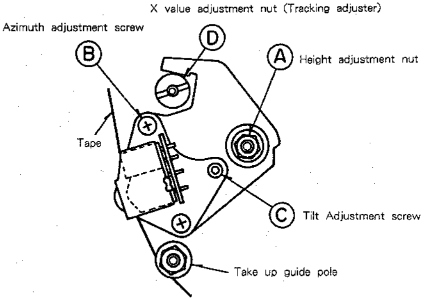
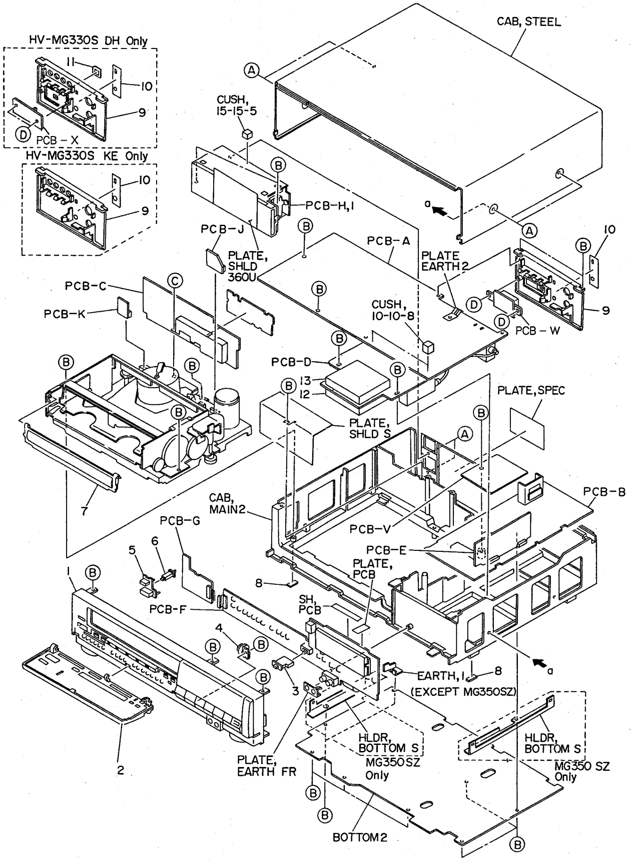

X value adjustment nut (Tracking adjuster)
Azimuth adjustment screw
Ⓓ
Ⓑ
Ⓐ Height adjustment nut
Tape
Ⓒ Tilt Adjustment screw
Take up guide pole

Fig.– 15

MECHANICAL EXPLODED VIEW 1／1

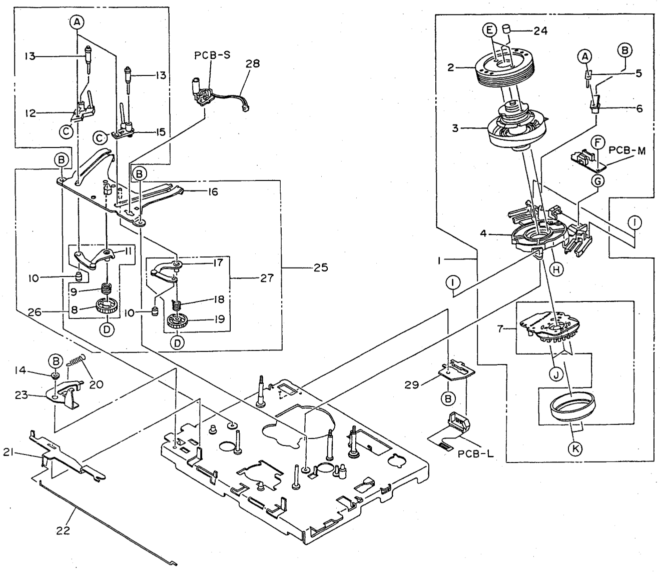

CAB, STEEL
HV-MG330S DH Only
11
10
9
D
PCB－X
HV-MG330S KE Only
10
9
A
CUSH, 15-15-5
B
PCB-H, I
PCB-J
PLATE, SHLD 360U
B
PCB-A
a
A
B
10
PLATE EARTH 2
D
D
PCB－W
9
PCB-C
C
PCB-K
B
CUSH, 10-10-8
B
PCB-D
B
B
B
B
13
12
PLATE, SHLD S
PLATE, SPEC
B
A
B
7
CAB, MAIN2
PCB-G
PCB-V
PCB-B
PCB-E
PLATE, PCB
5
6
1
B
8
PCB-F
SH, PCB
4
B
B
B
3
EARTH, I
8
(EXCEPT MG350SZ)
a
2
PLATE, EARTH FR
HLDR, BOTTOM S
MG350SZ Only
HLDR, BOTTOM S
MG350 SZ Only
B
B
BOTTOM2
B

MECHANICAL PARTS LIST 1／1

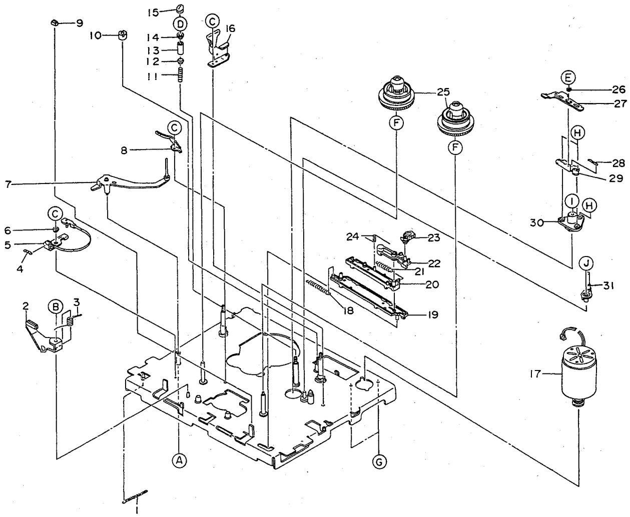
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	09-057-200-010		CABI FRONT ASSY〈MG330S DH, KE〉
1	09-057-199-010		CABI FRONT ASSY〈NG350S K, Z〉
2	09-057-198-010		DOOR ASSY〈NG330S DH, KE〉
2	09-057-197-010		DOOR ASSY〈MG350S K, Z〉
3	80-JU4-018-019		KNOB, SLIDE
4	87-063-144-019		OIL-DMPR 37
5	80-JU4-004-019		KEY, POWER
6	80-JU4-007-019		GUIDE, LIGHT PO
7	80-JU4-016-119		DOOR, CASSE 4S
8	80-JU4-221-019		FELT FOOT S
9	89-JU5-011-319		PANEL, JACK〈MG330S KE〉
9	80-JU4-054-019		PANEL, JACK〈MG350S K, Z〉
9	80-JU4-035-019		PANEL, JACK〈MG330S DH〉
10	80-JU4-058-010		PLATE, JACK〈MG350S K, Z〉
10	89-JU5-040-010		PLATE, JACK〈MG330S DH〉
10	80-JU6-007-110		PLATE, JACK〈MG330S KE〉
11	89-JU4-036-010		PLATE, SW DH 330〈MG330S DH〉
12	80-JU4-204-010		SHLD, D1
13	80-JU4-205-010		SHLD, D2
A	87-067-660-019		BVT2+3-8W/O SLOT BLK
B	87-067-680-019		BVIT3B+3-10
C	87-067-686-019		BVIT3+2. 6-8
D	87-067-579-019		BVT 2+3-8 W/O〈EXCEPT MG330S KE〉

VIDEO MECHANISM EXPLODED VIEW 1/7



VIDEO MECHANISM EXPLODED VIEW 2/7



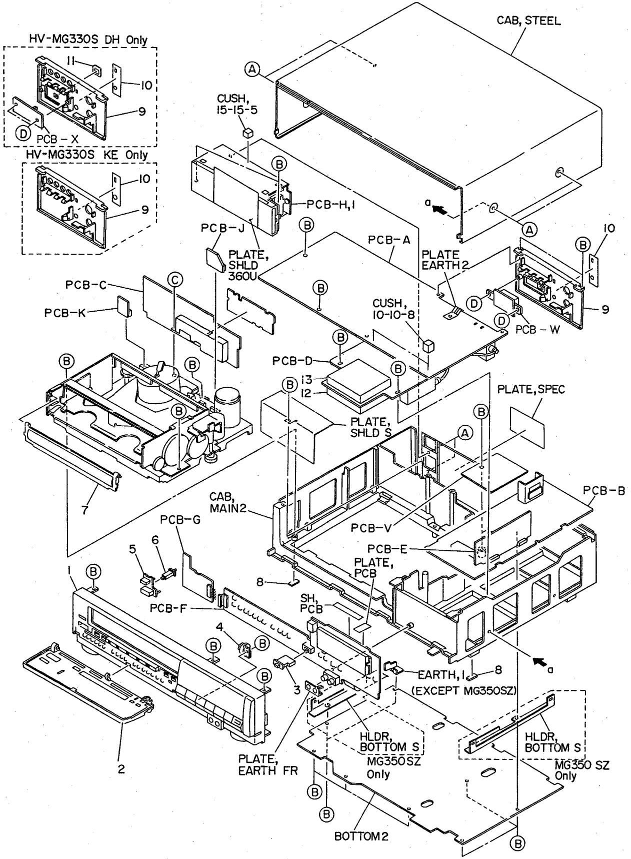
VIDEO MECHANISM PARTS LIST 1/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-825-0A0		CYLINDER ASSY
2	S8-059-010-180		UPPER DRUM TPA3-012
3	S8-059-013-040		LOWER DRUM ASSY
4	S8-059-010-010		CYLINDER MOUNT
5	S8-059-010-540		DRUM EARTH FLAT SPRING
6	S8-059-010-020		DRUM EARTH BRACKET
7	S6-004-030-240		MOTOR TM85
8	S8-059-030-060		T LOADING GEAR L
9	S8-059-030-080		LOADING GEAR SPRING L
10	S8-059-030-140		LOADING BOSS
11	S8-059-035-020		LOADING PLATE L SEMI ASSY
12	S8-059-030-040		LOADING BLOCK L
13	S8-000-030-370		ROLLER POST ST
14	S8-059-060-180		COLLAR
15	S8-059-030-050		LOADING BLOCK R
16	S8-059-035-010		LOADING BASE SEMI ASSY
17	S8-059-035-030		LOADING PLATE R SEMI ASSY
18	S8-059-030-090		LOADING GEAR SPRING R
19	S8-059-030-070		T LOADING GEAR R
20	S8-059-130-140		REC LEVER SPRING
21	S8-059-130-070		REC ACTUATOR
22	S8-059-130-110		REC ACTUATE SPOKE
23	S8-059-130-060		REC LEVER
24	S8-059-010-260		DRUM EARTH
25	S8-059-033-010		LOADING BASE ASSY
26	S8-059-033-020		LOADING GEAR L ASSY
27	S8-059-033-030		LOADING GEAR R ASSY
28	S8-059-133-030		LAMP ASSY
29	S8-059-010-710		CONNECTOR BRACKET
A	S9-665-000-000		CUP SCRW 2.6X3
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-C17-202-730		SCREW CAMERA
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-972-000-000		BIND TAMS SCREW 3X8
F	S9-973-000-000		W TAMS SCREW 2.6X6
G	S9-715-000-000		WASHER 2.6
H	S9-999-180-180		TAPPING SCREW
I	S9-205-000-000		C TAPPING SCREW 3X10
J	S9-055-000-000		SCREW 2.6X20
K	S9-999-200-350		COLLAR SCREW

VIDEO MECHANISM PARTS LIST 2/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-080-200		BT ACTUATE PLATE SPRING
2	S8-059-103-040		S SOFT BRAKE ASSY
3	S8-059-100-220		S SOFT BRAKE SPRING
4	S8-059-080-170		BAND HOLDER SPRING
5	S8-059-083-020		BT BAND ASSY
6	S8-059-080-150		BAND HOLDER COLLAR
7	S8-059-085-010		BT ARM SEMI ASSY
8	S8-059-080-090		BACK TENSION SUPPORT
9	S8-059-020-230		DAMPER RUBBER
10	S8-059-020-290		TRACKING ADJUSTER
11	S8-059-020-260		TAPE GUIDE SPRING
12	S8-000-030-290		TAPE GUIDE FLANGE D
13	S8-000-030-140		TAPE GUIDE
14	S8-000-032-8A0		TAPE GUIDE FLANGE C
15	S8-000-030-190		GUIDE CAP
16	S8-059-023-010		OPEN ANGLE ASSY
17	S8-059-073-020		CAPSTAN MOTOR ASSY
18	S8-059-100-100		BRAKE ACTUATE BASE SPRING
19	S8-059-100-090		BRAKE ACTUATE BASE
20	S8-059-100-110		BRAKE PLATE
21	S8-059-100-120		BRAKE PLATE SPRING
22	S8-059-100-130		TRIGGER LEVER
23	S8-059-100-140		TRIGGER HOOK
24	S8-059-100-230		TRIGGER LEVER SPRING
25	S8-059-053-010		REEL ASSY
26	S8-059-170-100		RG SLIDE PLATE COLLAR
27	S8-059-170-030		RG SLIDE PLATE
28	S8-059-170-110		RG SLIDE SPRING
29	S8-059-170-090		RG SLIDE BASE
30	S8-059-073-010		METAL HOUSING ASSY
31	S8-059-175-020		RG ARM SEMI ASSY
A	S9-999-030-150		PW CUT 2.1X4X0.5
B	S9-876-000-000		PW CUT 2.1X5X0.5
C	S9-191-000-000		C TAPPING SCREW 2.6X4
D	S9-453-000-000		NUT 3.0
E	S9-077-000-000		TAMS SCREW 2X4
F	S9-969-000-000		D WASHER 3.1X6X0.6
G	S9-105-000-000		TAMS SCREW 3X4
H	S9-195-000-000		C TAPPING SCREW 2.6X8
I	S9-999-060-030		NYLON WASHER 2.92X5X0.5
J	S9-884-000-000		PW 2.6X6X0.5 CUT

MECHANICAL EXPLODED VIEW 1／1

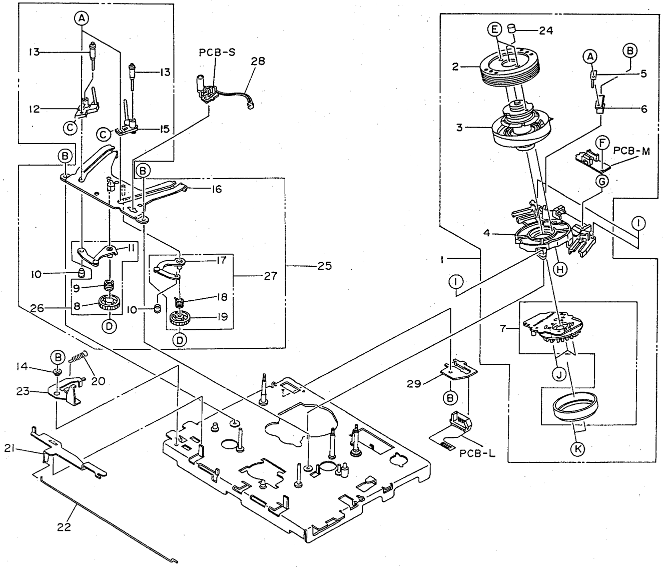

CAB, STEEL
HV-MG330S DH Only
11
10
9
D
PCB - X
HV-MG330S KE Only
10
9
A
CUSH,
15-15-5
B
PCB-H, I
a
PCB-J
B
PCB-A
A
10
B
PLATE,
SHLD
360U
PLATE
EARTH2
PCB-C
C
B
PCB-K
CUSH,
10-10-8
D
D
9
PCB - W
B
B
PCB-D
B
B
13
12
B
PLATE, SPEC
B
PLATE,
SHLD S
B
A
7
CAB,
MAIN2
PCB-B
PCB-G
PCB-V
PCB-E
6
5
PLATE,
PCB
8
1
B
PCB-F
SH,
PCB
4
B
B
B
a
EARTH, I
8
3
(EXCEPT MG350SZ)
B
HLDR,
BOTTOM S
MG350SZ
Only
HLDR,
BOTTOM S
MG350 SZ
Only
2
PLATE,
EARTH FR
B
B
BOTTOM2
B

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	09-057-200-010		CABI FRONT ASSY〈MG330S DH, KE〉
1	09-057-199-010		CABI FRONT ASSY〈NG350S K, Z〉
2	09-057-198-010		DOOR ASSY〈NG330S DH, KE〉
2	09-057-197-010		DOOR ASSY〈MG350S K, Z〉
3	80-JU4-018-019		KNOB, SLIDE
4	87-063-144-019		OIL-DMPR 37
5	80-JU4-004-019		KEY, POWER
6	80-JU4-007-019		GUIDE, LIGHT PO
7	80-JU4-016-119		DOOR, CASSE 4S
8	80-JU4-221-019		FELT FOOT S
9	89-JU5-011-319		PANEL, JACK〈MG330S KE〉
9	80-JU4-054-019		PANEL, JACK〈MG350S K, Z〉
9	80-JU4-035-019		PANEL, JACK〈MG330S DH〉
10	80-JU4-058-010		PLATE, JACK〈MG350S K, Z〉
10	89-JU5-040-010		PLATE, JACK〈MG330S DH〉
10	80-JU6-007-110		PLATE, JACK〈MG330S KE〉
11	89-JU4-036-010		PLATE, SW DH 330〈MG330S DH〉
12	80-JU4-204-010		SHLD, D1
13	80-JU4-205-010		SHLD, D2
A	87-067-660-019		BVT2+3-8W/O SLOT BLK
B	87-067-680-019		BVIT3B+3-10
C	87-067-686-019		BVIT3+2. 6-8
D	87-067-579-019		BVT 2+3-8 W/O〈EXCEPT MG330S KE〉

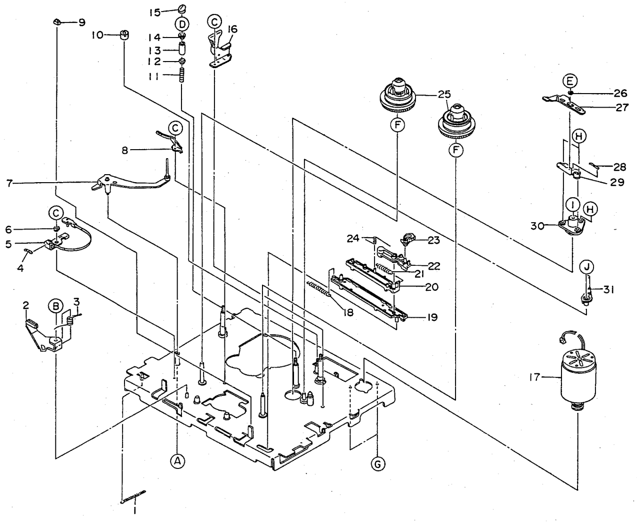
VIDEO MECHANISM EXPLODED VIEW 1/7



VIDEO MECHANISM PARTS LIST 1/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-825-0A0		CYLINDER ASSY
2	S8-059-010-180		UPPER DRUM TPA3-012
3	S8-059-013-040		LOWER DRUM ASSY
4	S8-059-010-010		CYLINDER MOUNT
5	S8-059-010-540		DRUM EARTH FLAT SPRING
6	S8-059-010-020		DRUM EARTH BRACKET
7	S6-004-030-240		MOTOR TM85
8	S8-059-030-060		T LOADING GEAR L
9	S8-059-030-080		LOADING GEAR SPRING L
10	S8-059-030-140		LOADING BOSS
11	S8-059-035-020		LOADING PLATE L SEMI ASSY
12	S8-059-030-040		LOADING BLOCK L
13	S8-000-030-370		ROLLER POST ST
14	S8-059-060-180		COLLAR
15	S8-059-030-050		LOADING BLOCK R
16	S8-059-035-010		LOADING BASE SEMI ASSY
17	S8-059-035-030		LOADING PLATE R SEMI ASSY
18	S8-059-030-090		LOADING GEAR SPRING R
19	S8-059-030-070		T LOADING GEAR R
20	S8-059-130-140		REC LEVER SPRING
21	S8-059-130-070		REC ACTUATOR
22	S8-059-130-110		REC ACTUATE SPOKE
23	S8-059-130-060		REC LEVER
24	S8-059-010-260		DRUM EARTH
25	S8-059-033-010		LOADING BASE ASSY
26	S8-059-033-020		LOADING GEAR L ASSY
27	S8-059-033-030		LOADING GEAR R ASSY
28	S8-059-133-030		LAMP ASSY
29	S8-059-010-710		CONNECTOR BRACKET
A	S9-665-000-000		CUP SCRW 2.6X3
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-C17-202-730		SCREW CAMERA
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-972-000-000		BIND TAMS SCREW 3X8
F	S9-973-000-000		W TAMS SCREW 2.6X6
G	S9-715-000-000		WASHER 2.6
H	S9-999-180-180		TAPPING SCREW
I	S9-205-000-000		C TAPPING SCREW 3X10
J	S9-055-000-000		SCREW 2.6X20
K	S9-999-200-350		COLLAR SCREW

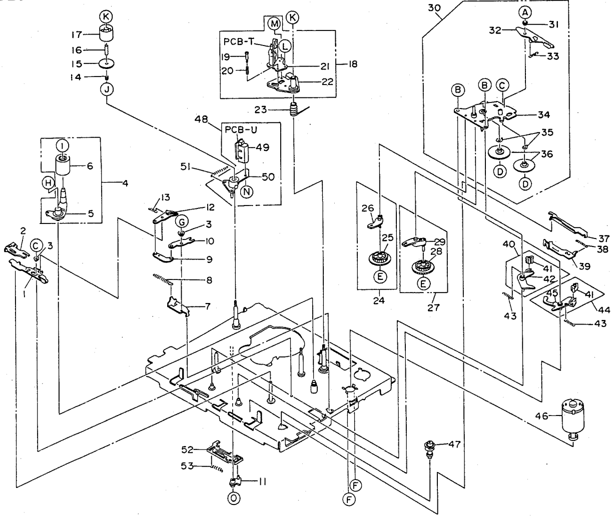
VIDEO MECHANISM EXPLODED VIEW 2/7



VIDEO MECHANISM PARTS LIST 2/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-080-200		BT ACTUATE PLATE SPRING
2	S8-059-103-040		S SOFT BRAKE ASSY
3	S8-059-100-220		S SOFT BRAKE SPRING
4	S8-059-080-170		BAND HOLDER SPRING
5	S8-059-083-020		BT BAND ASSY
6	S8-059-080-150		BAND HOLDER COLLAR
7	S8-059-085-010		BT ARM SEMI ASSY
8	S8-059-080-090		BACK TENSION SUPPORT
9	S8-059-020-230		DAMPER RUBBER
10	S8-059-020-290		TRACKING ADJUSTER
11	S8-059-020-260		TAPE GUIDE SPRING
12	S8-000-030-290		TAPE GUIDE FLANGE D
13	S8-000-030-140		TAPE GUIDE
14	S8-000-032-8A0		TAPE GUIDE FLANGE C
15	S8-000-030-190		GUIDE CAP
16	S8-059-023-010		OPEN ANGLE ASSY
17	S8-059-073-020		CAPSTAN MOTOR ASSY
18	S8-059-100-100		BRAKE ACTUATE BASE SPRING
19	S8-059-100-090		BRAKE ACTUATE BASE
20	S8-059-100-110		BRAKE PLATE
21	S8-059-100-120		BRAKE PLATE SPRING
22	S8-059-100-130		TRIGGER LEVER
23	S8-059-100-140		TRIGGER HOOK
24	S8-059-100-230		TRIGGER LEVER SPRING
25	S8-059-053-010		REEL ASSY
26	S8-059-170-100		RG SLIDE PLATE COLLAR
27	S8-059-170-030		RG SLIDE PLATE
28	S8-059-170-110		RG SLIDE SPRING
29	S8-059-170-090		RG SLIDE BASE
30	S8-059-073-010		METAL HOUSING ASSY
31	S8-059-175-020		RG ARM SEMI ASSY
A	S9-999-030-150		PW CUT 2.1X4X0.5
B	S9-876-000-000		PW CUT 2.1X5X0.5
C	S9-191-000-000		C TAPPING SCREW 2.6X4
D	S9-453-000-000		NUT 3.0
E	S9-077-000-000		TAMS SCREW 2X4
F	S9-969-000-000		D WASHER 3.1X6X0.6
G	S9-105-000-000		TAMS SCREW 3X4
H	S9-195-000-000		C TAPPING SCREW 2.6X8
I	S9-999-060-030		NYLON WASHER 2.92X5X0.5
J	S9-884-000-000		PW 2.6X6X0.5 CUT

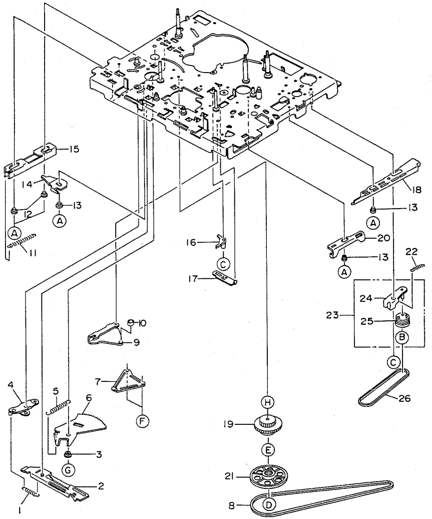
VIDEO MECHANISM EXPLODED VIEW 3/7



VIDEO MECHANISM PARTS LIST 3/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-060-240		P SLIDE PLATE A
2	S8-059-060-250		P SLIDE PLATE B
3	S8-059-060-180		COLLAR
4	S8-059-063-010		PINCH ROLLER ARM ASSY
5	S8-059-065-010		PINCH ROLLER ARM SEMI ASSY
6	S8-000-090-220		PINCH ROLLER A
7	S8-059-060-190		P ANGLE HOLDER
8	S8-059-060-200		P-SPRING, ROLLER
9	S8-059-060-060		JOINT PLATE
10	S8-059-060-050		P ACTUATE ANGLE
11	S8-059-040-110		FE ACTUATE LEVER
12	S8-059-060-040		P ACTUATE ARM
13	S8-059-060-090		P-SPRING, ACTUATE ARM
14	S8-059-040-090		TAPE GUIDE FLANGE SPRING
15	S8-059-040-070		TAPE GUIDE FLANGE A
16	S8-059-040-060		IMPEDANCE ROLLER SLEEVE
17	S8-059-040-050		IMPEDANCE ROLLER
18	S8-059-043-080		HEAD BASE ASSY
19	S8-000-060-260		AZIMUTH SPRING SCREW
20	S8-000-060-040		AZIMUTH SPRING
21	S6-204-150-060		ACE HEAD HV225211
22	S8-059-045-020		HEAD BASE SEMI ASSY
23	S8-059-040-150		HEAD SPRING
24	S8-059-093-140		P GEAR ASSY
25	S8-059-092-0A0		PLAY GEAR
26	S8-059-093-030		P GEAR ARM ASSY
27	S8-059-093-150		RF GEAR ASSY
28	S8-059-092-2A0		FF GEAR
29	S8-059-093-040		RF GEAR ARM ASSY
30	S8-059-093-160		SUB PLATE ASSY
31	S8-059-100-070		T SOFT BRAKE ARM COLLAR
32	S8-059-103-030		T SOFT BRAKE ASSY
33	S8-059-100-060		T-SPRING, SOFT BRAKE ARM
34	S8-059-095-010		SUB PLATE SEMI ASSY
35	---		WAVE WASHER
36	S8-059-090-6A0		REEL DRIVE GEAR
37	S8-059-100-160		BRAKE LIFTER
38	S8-059-100-180		L BRAKE ACTUATOR SPRING
39	S8-059-100-170		L BRAKE ACTUATOR
40	S8-059-103-010		S BRAKE ARM ASSY
41	S8-059-100-190		BRAKE SHOE
42	S8-059-100-010		S BRAKE ARM
43	S8-059-100-020		BRAKE ARM SPRING
44	S8-059-103-020		T BRAKE ARM ASSY
45	S8-059-100-030		T BRAKE ARM
46	S8-059-113-010		LOADING MOTOR ASSY
47	S8-059-113-020		TRIGGER BEARING ASSY
48	S8-059-043-020		FE PLATE ASSY
49	S6-204-150-030		FE HEAD HV113006
50	S8-059-040-040		FE PLATE
51	S8-059-040-080		FE PLATE SPRING
52	S8-059-040-100		FE SLIDE PLATE
53	S8-059-040-120		FE ACTUATE SPRING
A	S9-974-000-000		SL FH SCREW 2X3
B	S9-077-000-000		TAMS SCREW 2X4
C	S9-192-000-000		C TAPPING SCREW 2.6X5
D	S9-500-000-000		E RING S1.5
E	S9-743-000-000		PW CUT 1.6X3.8X0.3
F	S9-105-000-000		C TAPPING SCREW 3X4
G	S9-096-000-000		TAMS SCREW 2.6X4
H	S9-999-030-110		PW CUT 5X8X0.5
I	S9-038-000-000		SCREW 2.6X4
J	S9-337-000-000		PLANE WASHER 3X8X0.5
K	S9-953-000-000		NYLON NUT M3
L	S9-999-200-250		SCREW 3X6(SHAPE TYPE)
M	S9-705-000-000		LONG LOCK SCREW 2.6X7
N	S9-114-000-000		FLANGE BIND 2X3
O	S9-876-000-000		PW CUT 2.1X5X0.5

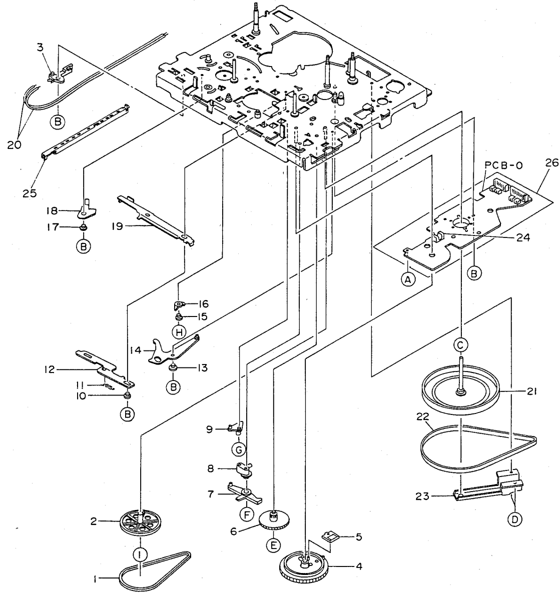
VIDEO MECHANISM EXPLODED VIEW 4/7



VIDEO MECHANISM PARTS LIST 4/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-120-050		LOADING ACTUATOR SPRING
2	S8-059-125-030		LOADING ACTUATOR SEMI ASSY
3	S8-059-120-100		L GEAR PLATE COLLAR
4	S8-059-125-020		LOADING ACTUATE LVR SEMI ASSY
5	S8-059-120-120		L GEAR PLATE SPRING
6	S8-059-120-090		L GEAR PLATE
7	S8-059-120-110		LOADING LEVER REINFORCE PLATE
8	S8-059-090-170		DRIVE BELT
9	S8-059-125-010		LOADING LEVER SEMI ASSY
10	S8-059-120-130		CAM ROLLER
11	S8-059-080-130		BACK TENSION SPRING
12	S8-059-080-210		BT ACTUATE PLATE COLLAR
13	S8-059-060-180		COLLAR
14	S8-059-080-180		BT ACTUATE LEVER
15	S8-059-080-190		BT ACTUATE PLATE
16	S8-059-170-010		RG ACTUATE ARM
17	S8-059-170-020		ORG ACTUATE
18	S8-059-150-070		L BRAKE PLATE
19	S8-059-093-100		CLUTCH ASSY
20	S8-059-150-080		EJECT ACTUATOR
21	S8-059-093-010		MIDDLE PULLEY ASSY
22	S8-059-150-110		IDLER ARM SPRING
23	S8-059-153-030		E IDLER ARM ASSY
24	S8-059-155-020		E IDLER ARM SEMI ASSY
25	S8-059-150-150		EJECT PULLEY
26	S8-059-150-060		FL BELT
A	S9-192-000-000		C TAPPING SCREW 2.6X5
B	S9-743-000-000		PW CUT 1.6X3.8X0.3
C	S9-876-000-000		PW CUT 2.1X5X0.5
D	S9-884-000-000		PW CUT 2.6X6X0.5
E	S9-999-060-040		NYLON WASHER 2.98X6X0.3
F	S9-078-000-000		TAMS SCREW 2X5
G	S9-203-000-000		C TAPPING SCREW 3X6
H	S9-W03-301-800		NYLON WASHER 3.3X6X0.3

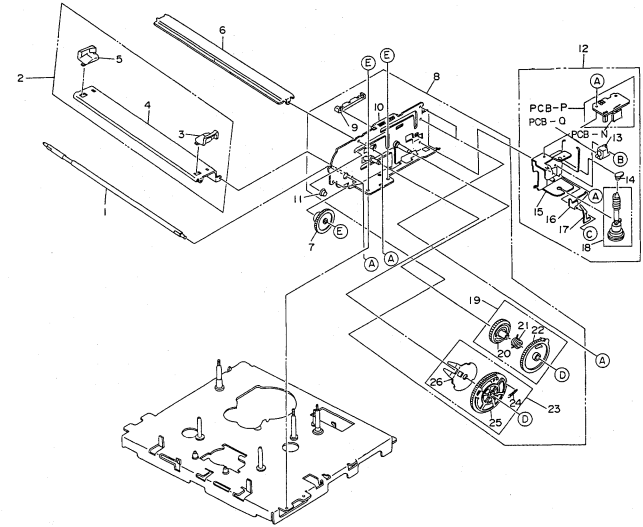
VIDEO MECHANISM EXPLODED VIEW 5/7



VIDEO MECHANISM PARTS LIST 5/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-110-060		LOADING BELT
2	S8-059-110-030		LOADING PULLEY
3	S6-401-011-770		LEAF SWITCH MCV-00321 MVDO
4	S8-059-110-010		LOADING CAM
5	S8-059-110-020		S BRUSH
6	S8-059-110-040		LOADING GEAR
7	S8-059-110-140		EJECT ARM
8	S8-059-110-130		BRAKE ACTUATE ARM
9	S8-059-110-120		SEARCH ARM B
10	S8-059-060-110		P SLIDER COLLAR
11	S8-059-060-230		P-SPRING SLIDER
12	S8-059-060-100		P SLIDER
13	S8-059-060-170		P CAM LEVER COLLAR
14	S8-059-065-020		P CAM LEVER SEMI ASSY
15	S8-059-060-130		P CRANK COLLAR
16	S8-059-060-120		P CRANK
17	S8-059-060-180		COLLAR
18	S8-059-080-230		BT RETURN LEVER
19	S8-059-080-100		BT CHANGE PLATE
20	---		WIRE
21	S8-059-070-140		FLYWHEEL CAPSTAN
22	S8-059-070-100		MAIN BELT
23	S8-059-073-030		FL ANGLE ASSY
24	S6-808-080-030		REEL SENSOR
25	---		WIRE HOLDER
26	S8-059-133-020		BASE PLATE ASSY
A	S9-803-000-000		S TAPPING SCREW 2.6X5
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-912-000-000		PW 3.1X6X0.5
D	S9-202-000-000		C TAPPING SCREW 3X5
E	S9-876-000-000		PW CUT 2.1X5X0.5
F	S9-999-030-100		PW CUT 2.6X8X0.5
G	S9-884-000-000		PW CUT 2.6X6X0.5
H	S9-999-180-100		C TAPPING FH SCREW 2.6X4
I	S9-999-700-140		HL WASHER CUT 1.7X4X0.3

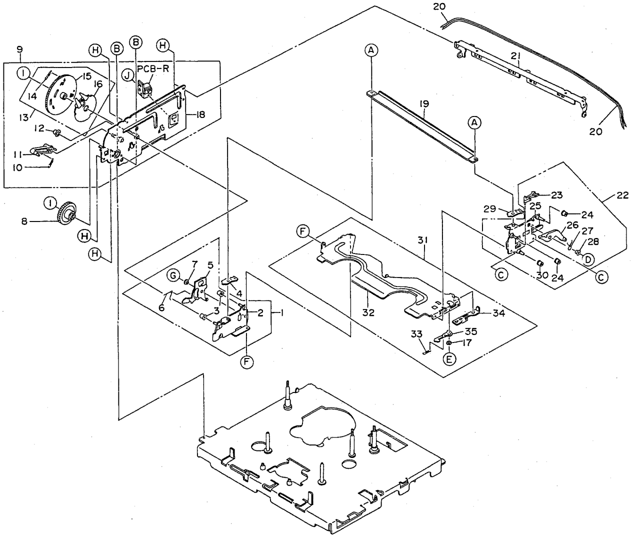
VIDEO MECHANISM EXPLODED VIEW 6/7



VIDEO MECHANISM PARTS LIST 6/7

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	S8-059-160-600		SYNCHRONIZE SHAFT
2	S8-059-163-070		FRONT ANGLE ASSY
3	S8-059-160-250		TAPE GUIDE R
4	S8-059-160-180		FRONT ANGLE
5	S8-059-160-240		TAPE GUIDE L
6	S8-000-220-070		UPPER PLATE
7	S8-059-160-170		SYNCHRONIZE GEAR A
8	S8-059-163-220		FRAME R ASSY
9	S8-000-220-260		OPEN LEVER GUIDE
10	S8-059-165-040		FRAME R SEMI ASSY
11	S8-000-220-240		GUIDE SLEEVE
12	S8-059-163-180		C LOAD BRACKET ASSY
13	---		SENSOR P.C.B RM ASSY
14	S8-059-160-060		F WORM BEARING A
15	S8-059-165-060		C LOAD BRACKET SEMI ASSY
16	S8-059-160-340		IN SW LEVER
17	S8-059-160-330		S SW LEVER
18	S8-059-163-190		F LOADING CLUTCH ASSY
19	S8-059-163-210		WORM WHEEL ASSY
20	S8-059-160-450		FRICTION GEAR
21	S8-059-160-310		FRICTION SPRING
22	S8-059-160-360		WORM WHEEL
23	S8-059-163-120		LIFT GEAR R ASSY
24	S8-000-220-450		LP SPRING
25	S8-000-220-150		LIFT GEAR R
26	S8-000-220-110		LIFT ARM
A	S9-096-000-000		TAMS SCREW 2.6X4
B	S9-078-000-000		TAMS SCREW 2X5
C	S9-743-000-000		PW CUT 1.6X3.8X0.3
D	S9-504-000-000		E RING S2.5
E	S9-192-000-000		C TAPPING SCREW 2.6X5

VIDEO MECHANISM EXPLODED VIEW 7/7



VIDEO MECHANISM PARTS LIST 7/7

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	S8-059-163-090		SIDE PLATE L ASSY
2	S8-059-165-030		SIDE PLATE L SEMI ASSY
3	S8-000-220-750		GUIDE ROLLER
4	S8-059-160-280		CASSETTE PUSH PLATE
5	S8-000-220-660		C LOCK PLATE L
6	S8-059-160-300		LOCK PLATE SPRING L
7	S8-000-190-630		LOCK PLATE COLLAR
8	S8-059-160-170		SYNCHRONIZE GEAR A
9	S8-059-163-130		FRAME L ASSY
10	S8-000-220-470		LIFT LEVER SPRING
11	S8-000-220-760		LIFT LEVER
12	S8-000-220-240		GUIDE SLEEVE
13	S8-059-163-140		LIFT GEAR L ASSY
14	S8-000-220-450		LP SPRING
15	S8-000-220-140		LIFT GEAR L
16	S8-000-220-110		LIFT ARM
17	S8-059-060-180		COLLAR
18	S8-059-165-050		FRAME L SEMI ASSY
19	S8-000-220-650		TOP STAY
20	---		END SENSOR WIRE
21	S8-059-160-090		REAR ANGLE
22	S8-059-163-080		SIDE PLATE R ASSY
23	S8-000-220-160		LOCK RELEASE LEVER
24	S8-000-220-120		C LOCK PLATE A
25	S8-059-165-020		SIDE PLATE R SEMI ASSY
26	S8-000-220-250		OPEN LEVER
27	S8-000-220-440		OPEN LEVER SPRING
28	S8-000-220-420		OPEN LEVER COLLAR
29	S8-059-160-280		CASSETTE PUSH PLATE
30	S8-000-220-230		GUIDE ROLLER
31	S8-059-163-060		CASSETTE HOLDER ASSY
32	S8-000-220-030		CASSETTE HOLDER
33	S8-059-160-290		LOCK SPRING
34	S8-000-220-130		SLIDE PLATE
35	S8-059-163-170		FRONT LOADING ASSY
A	S9-833-000-000		SCREW 2.3X2
B	S9-192-000-000		C TAPPING SCREW 2.6X5
C	S9-556-000-000		SCREW 2.6X3
D	S9-967-000-000		SL SCREW 2X4
E	S9-968-000-000		SL SCREW 2.6X3
F	S9-991-000-000		SCREW 2.3X2.5
G	S9-966-000-000		SL SCREW 2X2.5
H	S9-096-000-000		TAMS SCREW 2.6X4
I	S9-504-000-000		E RING S2.5
J	S9-099-000-000		TAMS SCREW 2.6X7

■ ACCESSORIES／PACKAGE LIST

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can’t understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-JUS-904-019		IB, 350SZ〈Z〉
2	83-JUS-905-019		IB, 350SK〈K〉
3	83-JUS-906-019		IB, 330SDH, KE〈DH, KE〉
4	80-JU4-951-019		RC-TMG330〈Z, K, DH, KE〉
5	87-034-594-019		AC CORD SET E〈DH, KE〉
6	87-034-796-019		CORD, RF PAL S〈K, DH, KE〉
7	87-047-117-01B		BATT, SUM-3 ID〈EXCEPT MD36〉
8	87-050-033-019		AC CORD SET ASSY, K3P〈K〉
9	87-050-036-010		AC CODE SET ASSY Z〈Z〉
10	87-050-037-010		CORD ASSY, RF PAL Z〈Z〉

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
ｻｰｼﾞｻﾌﾟﾚｯｻ	SERGESUPPRESSOR
ｾﾗｺﾝ	CAP, CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTORL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOADING MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ｼﾞｸｱｰﾑ	ARM, SHAFT
ｼﾞｸｶﾞｲﾄﾞ	GUIDE, SHAFT
ｽﾄﾗｯﾌﾟ	STRAP
ﾄｸﾅﾍﾞ	S-SCRW
ﾋﾝｼﾞ	HINGE
ﾋﾝｼﾞﾋﾞｽ	S-SCRW
ﾋﾞｽｾﾚｰﾄ	SCRW, SERRART

サービス技術ニュース	
番号	連絡内容
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